U.S. Department of the Interior
Bureau of Land Management
Twin Falls District
Burley Field Office
Cassia County, Idaho **August 2006**

RECORD OF DECISION

for the

COTTEREL WIND POWER PROJECT

and

CASSIA RESOURCE MANAGEMENT PLAN AMENDMENT

RECORD OF DECISION
ENVIRONMENTAL IMPACT STATEMENT

COTTEREL WIND POWER PROJECT
AND
CASSIA RESOURCE MANAGEMENT PLAN AMENDMENT

Prepared for

U.S. Department of the Interior
Bureau of Land Management
Twin Falls District
Burley Field Office
Cassia County
15 East, 200 South
Burley, Idaho 83318

Right-of-Way

IDI-33676

August 2006

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I. INTRODUCTION

This Record of Decision (ROD) identifies the alternative selected by the Department of the Interior (DOI), the rationale for this decision, the mitigation and implementation measures, and the alternatives that were considered in the Final EIS (FEIS) for the *Proposed Cotterel Wind Power Project and Proposed Resource Management Plan Amendment* (FES 06-07), issued in March 2006. This decision culminates an extensive review and analysis of the anticipated direct, indirect, and cumulative environmental impacts of the Proposed Action and its alternatives. This ROD was prepared pursuant to the regulations of the Council on Environmental Quality (40 CFR 1505.2).

BACKGROUND INFORMATION

In late 2000, in response to the electric energy-pricing crisis in California and the Northwest, the Bonneville Power Administration (BPA) issued a "Request for Proposals" (RFP) for additional electrical power generated from potential wind energy projects, and Windland, Inc. (Windland), a Boise, Idaho company, began to investigate opportunities to respond to BPA's RFP.

In February 2001, Windland submitted an application to the Bureau of Land Management (BLM) Burley Field Office for a right-of-way (ROW) grant to conduct its own wind testing on Cotterel Mountain. This application was accepted by the BLM (serial number IDI-33675).

In March 2001, Windland followed its first application with a second ROW grant application (IDI-33676) to construct, operate, and maintain a wind-driven electric power generation facility on Cotterel Mountain. This application was filed by Windland in advance of the proposed meteorological data collection in order to be first in consideration for such a project. This second application was accepted by the BLM. Based on the size and scope of the proposed action, the BLM determined that the construction, operation and maintenance of a wind power project on Cotterel Mountain had the potential to result in significant environmental impacts, thereby triggering the need to prepare an Environmental Impact Statement (EIS) to evaluate the proposed action and all reasonable alternatives in compliance with the National Environmental Policy Act of 1969 (NEPA).

In April 2001, Windland responded to the BPA RFP based on the studies showing potential for development of a wind-powered electrical generation project on Cotterel Mountain (see Figure 1.0-2 in FEIS).

In July 2001, the BLM issued a ROW grant (IDI-33675) authorizing Windland to install multiple wind speed and direction recording devices (anemometers) at various locations on Cotterel Mountain. Potential impacts of the wind testing proposal were analyzed in Environmental Assessment (EA) number ID-077-EA-01-0063, and a Finding of No Significant Impact was signed by the Burley Field Office Manager on July 13, 2001.

On December 19, 2002, the BLM published a Notice of Intent (NOI) to prepare an EIS for the full project proposal in the Federal Register. The NOI identified the proposed Cotterel Wind Power Project area and location as well as BLM's intention to hold agency and public

scoping meetings. The initial scoping period ran for 60 days and concluded on February 21, 2003.

On June 21, 2005, a Notice of Availability (NOA) was published in the Federal Register and the Draft EIS was made available to the public. The publishing of the NOA in the Federal Register marked the beginning of a 90-day public comment period for the Draft EIS.

The FEIS, which was released to the public in March of 2006, presents the alternatives under consideration and those considered but eliminated from detailed analysis. Alternative A – The No Action Alternative, Alternative B – The Proposed Action Alternative, Alternative C – Agency's Preferred Alternative, and Alternative D are evaluated.

OVERVIEW OF THE PROJECT

The Project would be developed on Cotterel Mountain. The Project ROW grant application area is approximately 4,545 acres, extending approximately 16 miles from north to south along the Cotterel Mountain ridgeline. Major components of the Project and project alternatives include:

- Multiple wind turbines and turbine foundations;
- Multiple pad-mounted transformers;
- Buried power collection and communication cables;
- Several miles of project access roads;
- Meteorological towers on foundations;
- One to two substations;
- 138 kilovolt (kV) overhead power transmission line;
- Operations and maintenance building; and
- Portable on-site cement batch plant and rock crusher.

During construction, there would also be several on-site temporary equipment storage and construction staging areas. There may also be additional equipment storage and construction staging areas in the vicinity of Cotterel Mountain. A detailed description of the Project and construction methods can be found in Chapter 2 of the FEIS.

Since the release of the Proposed Cotterel Wind Power Project Draft EIS, the BLM has published the Final Programmatic Environmental Impact Statement and Record of Decision on Wind Energy Development on BLM-Administered Lands in the Western United States (USDI, BLM 2005). It provides valuable information about wind energy development, including recommended best management practices. The Best Management Practices (BMP) in the Cotterel Wind Power Project meet or exceed those in the Wind Energy Programmatic EIS.

II. AGENCY ACTION

PLAN AMENDMENT

In order for the Project to be implemented, Windland must secure a ROW grant from the BLM, the agency that manages the involved Federal lands. Because the BLM has jurisdiction over the land in which the ROW grant is granted and is a Federal agency with special expertise in land use, biological, cultural resource, visual, and other environmental issues, the BLM was the lead agency for preparation of this NEPA analysis. BLM's primary actions subject to NEPA review are whether to amend the Cassia Resource Management Plan (RMP) and whether to approve or deny a ROW grant across public lands for the Project.

Cooperating agencies are the agencies that have jurisdiction by law or special expertise with respect to an environmental issue, 40 CFR 1501.6. In the Cotterel Wind Power Project EIS, cooperating agencies include the BPA; U.S. Fish and Wildlife Service (USFWS); Idaho Department of Lands (IDL) representing the State Government; Bureau of Reclamation (BOR); and Cassia County Commissioners representing the local government. The Idaho Department of Fish and Game (IDFG) is a participating agency and is providing input relevant to wildlife and wildlife habitat.

A core group of wildlife biologists from the Bureau of Land Management, U.S. Fish & Wildlife Service, and the IDFG was organized under charter in 2004 by the BLM. This team, known as the Interagency Wind Energy Task Team (IWETT), was a cooperative interagency effort, specifically formed to review data, identify additional data needs, assist in the development of alternatives and mitigation recommendations for wildlife and wildlife habitat, and assist in the development of adaptive management strategies. A new iteration of this team, referred to in the FEIS as the Technical Steering Committee, will continue to work together in the development of monitoring and the adaptive management processes.

In reviewing the applications for ROW grants, BLM must consider land status, consistency with land use plans, affected resources, resource values, environmental conditions, and concerns of various interested parties. Complete guidance for implementing the NEPA process within BLM can be found in the *National Environmental Policy Act Handbook (H-1790)* and DOI guidance.

RIGHT-OF-WAY AUTHORIZATION

Title V of the Federal Land Policy and Management Act (FLPMA), 43 U.S.C. 1761-1771, authorizes the BLM, acting on behalf of the Secretary of the Interior to grant a ROW on, over, under, and through the public lands for systems for generation, transmission, and distribution of electric energy. BLM's implementation of its statutory direction for ROW grants is detailed in 43 CFR Part 2800 and the BLM 2800 Manual. BLM policy is to: 1) authorize ROW uses on the public lands at the discretion of the BLM Authorized Officer and in the most efficient and economical manner possible; 2) manage ROW use of the public lands through a system of ROW corridors; 3) maximize the use of performance stipulations through construction, operation, and maintenance plans; and 4) assure to the greatest extent possible that identified impacts are mitigated and that the holder complies with the terms and conditions of the ROW grant. Authorized Officer means any employee of the Department of

the Interior to whom has been delegated the authority to perform the duties described in 43 CFR Part 2800. In respect to this grant, this authority has been delegated to the Field Manager, Burley Field Office, Bureau of Land Management.

III. DECISION

After considering the full agency and public record compiled through processing the applications for a ROW grant for the Cotterel Wind Power Project, it is the BLM's decision to proceed with the implementation of the Cotterel Wind Power Project and associated transmission lines as currently described in Alternative C. The Project involves a single linear string of towers with the towers being approximately one-quarter mile apart. In addition, the Cassia RMP amendment is specific to the Project only, and no other wind energy projects will be permitted on Cotterel Mountain (page 4-19, 20 FEIS). This decision pertains only to lands administered by or under the jurisdiction of the BLM.

PLAN AMENDMENT

In accordance with Section 102(2)(c) of NEPA (42 U.S.C. 4332), the regulations of the Council on Environmental Quality that implement NEPA (40 CFR Parts 1500-1508), Section 202 and Title V of FLPMA, and the regulations found at 43 CFR Parts 1600 and 2800, the following actions will be taken:

> The BLM will amend its existing Cassia RMP by partially lifting the right-of-way restriction on the Cotterel Mountain Management Area, which will allow the granting of a ROW on Cotterel Mountain for a single wind energy development project and related transmission interconnect line. The amended restriction would read, "limit rights-of-way to existing facilities/localities, with the exception of one wind energy project."
>
> The amendment will also involve changing the language in item B from the Resource Management Objectives on page 39 of the Cassia RMP which currently reads: "Manage the area to maintain scenic quality and open space." The new language would read: "Manage the area to maintain scenic quality and open space consistent with the Visual Resource Management (VRM) classes for management area 11 and with the exception of the development of one wind energy project." The area is classified VRM Class IV, in which projects such as the proposed action are acceptable. The existing Resource Management Objective G, also on page 39 of the RMP, currently reads: "Maintain or improve 6,414 acres of crucial deer winter range and 703 acres of sage-grouse brood-rearing habitat." It will be revised to read as follows: "Maintain or improve 6,414 acres of crucial deer winter range and 600 acres of sage-grouse brood rearing habitat". Construction and operation of the Project would also change the Recreation Opportunity Spectrum of Cotterel Mountain within the Project area from semi-primitive motorized to roaded natural.

RIGHT-OF-WAY GRANT AUTHORIZATION

A right-of-way grant will be issued to Windland for the construction, operation, and maintenance, and termination of a wind-driven electric power generation facility and associated transmission lines and access roads across public lands administered by the Bureau of Land Management. The ROW grant will become effective the date it is signed.

The holder shall construct, operate, maintain, and terminate the facilities, improvements, and structures within the right-of-way in strict conformity with the project description and environmental protection measures set forth in Appendix A, the right-of-way grant, and accompanying terms, conditions, and stipulations.

The project will consist of access roads; wind turbines interconnected by a network of utility-grade facilities consisting of transformers at the base of each turbine; underground electric collection lines; substation(s); and transmission interconnect line(s) for connection to the existing utility grid. There will also be several wind speed measuring meteorological towers and an operations and maintenance (O&M) facility sited within the Project area. All of the wind turbine control systems would be connected by a communications system for computerized automated monitoring of the entire project. A temporary cement batch plant, rock crusher, and construction operation trailer pad will also be located on-site.

The ROW grant will terminate on December 31, 2036, unless prior thereto, it is relinquished, abandoned, terminated, or modified pursuant to the terms and conditions of the grant or of any applicable Federal law or regulation. The grant may be renewed. If renewed, the grant shall be subject to the regulations existing at the time of renewal and any other terms and conditions that the Authorized Officer deems necessary to protect the public interest.

All temporary work areas shall be reclaimed to the satisfaction of the Authorized Officer upon completion of construction. The Project Decommissioning Plan is contained in the Plan of Development (POD), Section 5, pages 5.1 to 5.16.

IV. ALTERNATIVES

Four alternatives were analyzed in the EIS. In addition, two alternative routes for the transmission lines were analyzed:

Alternative A – The No Action Alternative: Under Alternative A, the ROW grant for construction of a wind-powered electrical generation facility would not be issued and the RMP would not be amended by the BLM. This alternative would maintain current management practices for resources and allow for the continuation of

resources uses at levels identified in the Cassia RMP. This alternative would also incorporate any management decisions that have been made subsequently to the Cassia RMP. This alternative generally satisfies most commodity demands of public lands, while mitigating impacts to sensitive resources. It includes moderate levels of resource protection and development including: wildlife habitat protection; range improvements; vegetation treatments; soil erosion controls; and fire management. In addition, livestock use, recreation activities (including off-highway vehicle use), timber harvest, and land development (energy and communication) would continue at present levels. However, these levels would be subject to adjustments when monitoring studies indicate changing resource conditions or trends. ROWs would continue to be limited to those allowed under the current RMP.

Alternative B – The Proposed Action Alternative: This alternative is presented as proposed in the ROW grant application made by Windland to the BLM. Windland has attempted to reduce potential Proposed Project impacts through project design, application of BLM BMP, and consideration of input from its own public scoping efforts in developing its Proposed Action.

Under Alternative B, Windland is proposing to construct a wind-powered electric generation facility along the approximately 16-mile ridgeline of Cotterel Mountain. As proposed, the Project would consist of approximately 130, 1.5 megawatts (MW) wind turbines that would be sited along the west, central, and east ridges of Cotterel Mountain. The west string would be 0.8-miles in length and located along the short side-ridge west of the main Cotterel Mountain ridgeline. The center string of wind turbines would be about 10.9 miles in length and placed along the spine of the central ridgeline of the mountain. The east string of wind turbines would be 4.1 miles in length and located along the east ridgeline that extends south of the Cotterel Mountain summit. In addition to the 130 wind turbines, two 138 kilovolt (kV) overhead transmission interconnect lines would connect the Proposed Project to the transmission grid emanating from two separate substations. The exact location of wind turbines, roads, power lines, or other facility-related construction would be sited based on environmental, engineering, meteorological, and permit requirements.

Each turbine would be 210 feet in height to the center of the hub. Each of the three blades would be 115 feet in length, with an over-all diameter of 230 feet. Maximum blade height would be 325 feet above the surrounding landscape. There would be two substations. The substations would be located at the north and central portions of the middle turbine string. The substations would connect to the existing BPA and Raft River 138 kV transmission lines via two newly constructed transmission interconnect lines. The transmission interconnect lines ROW would cross lands managed by BLM, Idaho State, as well as those under private ownership.

Approximately 25 miles of all-weather gravel roads would be needed to access and maintain the Proposed Project. This would require about 4.5 miles of road reconstruction, and about 22 miles of new road construction. Total estimated cut volume for road construction would be approximately 2,660,000 cubic yards. The

estimated fill volume would be approximately 2,500,000 cubic yards. The total construction impact area for all project features would be about 365 acres. Following the reclamation of construction impact areas, the final Proposed Project would occupy an area of about 203 acres. Other physical components of the wind plant are described in Comparison of Project Features of Alternatives B, C and D.

Alternative C – Agency's Preferred Alternative: Alternative C is a modified alternative to the Proposed Action (Alternative B) with fewer but larger output wind turbines, alternative access, and alternative sub-station and transmission line locations. Under Alternative C, the IWETT has identified additional BMP that are included to specifically address wildlife issues and concerns related to sage-grouse, raptors, bats and requirements under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. Alternative C also incorporates a compensatory/off-site mitigation fund that provides the opportunity for monitoring and adaptive management, the extent of which would be determined by a technical steering committee.

Under Alternative C, Windland would construct a wind-powered electric generation facility along 14.5 miles of ridgeline of the Cotterel Mountain. If built as proposed, the project would consist of a linear alignment of approximately 81-98 wind turbines, based on the size of turbine selected, sited along the central and east ridges of Cotterel Mountain. The central ridge would have approximately 64 wind turbines and the east ridge would have approximately 17 turbines. In addition to the wind turbines, one 138 kV overhead transmission interconnect line would connect the Proposed Project to the transmission grid from a single substation. The exact location of wind turbines, roads, transmission interconnect line, or other facility-related construction would be sited based on detailed engineering to address site specific environmental, meteorological, or permit conditions including BMP.

Under Alternative C, a range of wind turbines would be considered. The smaller end of the range would have a 77-meter (230 foot) rotor diameter and would have a generation capacity of 1.5 MW. It would sit on a 65-meter (210 foot) tower and the rotor would consist of three blades, 115 feet in length. Maximum blade height would be 325 feet above the ground. The larger end of the range would have a 100-meter (328 foot) rotor diameter and would have a generation capacity of between two and three MW. It would sit on an 80-meter (262 foot) tower and the rotor would consist of three blades, 164 feet in length. Maximum blade height would be 426 feet above the ground.

A single substation would be located approximately midway along the central turbine string. Alternative C would have a single overhead 138 kV transmission interconnect line. The transmission interconnect line would extend northeast from the substation down to the Raft River Valley where it would cross over, but not connect to, the existing Raft River transmission line. From here the transmission interconnect line would extend to the north approximately 15 miles in a new ROW adjacent to the existing ROW for the Raft River transmission line. It would cross over the Snake

River west of the Minidoka Dam. The line would then travel in a northeast direction where it would connect the Proposed Project to the existing Idaho Power transmission lines located north of the Minidoka Dam. The transmission interconnect line ROW would cross lands managed by BLM, BOR, Idaho State, USFWS as well as those under private ownership.

The Proposed Project would require the reconstruction of about 3.2 miles of road and the construction of about 19.5 miles of new roads. Total estimated cut volume for road construction would be approximately 2,200,000 cubic yards. The estimated fill volume would be approximately 2,425,000 cubic yards. Under Alternative C, the total construction impact area for all project features would be about 352 acres. Following the reclamation of construction impact areas, the final Proposed Project would occupy an area of about 203 acres.

Public access on the ridgeline would consist of a combination of new project roads and existing and newly constructed primitive roads. Although public use of project roads along the ridgeline would be restricted through a series of gates, signage, and natural rock barriers, there would not be a loss of public access to existing use areas. Public access would be maintained by linking the existing primitive road system through construction of new primitive roads to allow existing uses of the area, including hunting, to continue.

Adaptive Management, Compensatory (Off-Site) Mitigation, Monitoring, and Technical Steering Committee Common to Alternatives C and D

Wind power projects have effects on wildlife, particularly avian species and bats, depending upon the location, geography, and natural setting of the project. Monitoring of the project (5 years or greater) is key in understanding the relationship between the project design, siting of the towers, operation of the facility, and effects on wildlife. These effects can occur in a variety of ways, but based on data collected at other wind farms, are chiefly associated with bird collisions with the large blades that drive each of the wind turbines. The blades move through an area defined as "the rotor swept area" of each turbine. Additional long-term monitoring may also be necessary to determine how the characteristics of the project and its turbines affect the behavior and migration of birds and bats and to determine if there are certain turbines along the string that are contributing to bird and bat mortality that would trigger the need to implement management actions to reduce these effects.

Adaptive Management

Adaptive management is based upon a concept of science that understands ecosystems are complex and inherently unpredictable over time. It approaches the uncertainties of ecosystem responses with attempts to structure management actions using a systematic method from which over time learning is a critical tool. Learning and adapting is based on a process of long-term monitoring of impacts to wildlife from this project. Windland and the BLM recognize that the findings of long-term monitoring could indicate the need for modification of operations and adaptive management. The BLM and Windland will work cooperatively with the USFWS and

the Idaho Department of Fish and Game to develop appropriate actions or mitigation measures designed to address issues or concerns identified as a result of monitoring. Adaptive management tools that are available to Windland and BLM include, but are not limited to: timing stipulations during construction, operational changes of turbines, siting considerations, lighting scenarios, and color schemes. These are addressed in the Plan of Development (Appendix A to ROD) Section 2.5 and right-of-way grant stipulations (Appendix A to ROW grant).

Compensatory Off-site Mitigation

BLM Washington Office Policy Guidance Instruction Memorandum No. 2005-069 states that off-site mitigation can be funded by voluntary contributions from the Applicant into a compensatory mitigation fund held by the BLM (Appendix E of the FEIS). This would be done by cooperative agreement between Windland and the BLM. This cooperative agreement would prescribe the level of contribution and the management and use of the fund. Windland has volunteered to contribute to a compensatory mitigation fund pursuant to the above-mentioned guidance and has executed a letter of commitment to enter into a cooperative agreement in accordance with the foregoing (Appendix F of the FEIS). Windland intends the annual contribution to be in an amount equal to approximately one-half of one percent of the gross revenues received from the Proposed Project electricity sales.

An extensive framework of off-site mitigation practices was also recommended by the IWETT to address impacts to wildlife, should they occur as a result of the Proposed Project. These practices would also be funded by the compensatory mitigation fund (described above). The kinds of off-site mitigation practices recommended include, but are not limited to: purchase of key habitats; acquisition of conservation easements on key habitats; or, restoration, treatment, or conversion of existing federally managed off-site habitats. Off-site activities proposed by the steering committee that would have associated impacts separate from the impacts identified and analyzed for this Proposed Project may need subsequent environmental analysis.

Monitoring

An extensive wildlife monitoring program for the Cotterel Wind Power Project is identified in five technical documents. These include the: *Plan of Development*; *Environmental Protection Measures*; *Cotterel Mountain Annual Sage-grouse Monitoring Protoco*l; *Cotterel Mountain Avian Fatality Monitoring Protocol*; and *Cotterel Mountain Raptor Nesting and Migration Monitoring Protocol.* The implementation of these wildlife monitoring protocols are the financial responsibility of the Holder and the BLM and are separate from the compensatory mitigation fund.

Technical Steering Committee

The technical steering committee will advise, monitor, and recommend actions during all phases of the project including construction. This committee will be formed and chartered prior to any construction of the Proposed Project. The intent is to ensure interagency involvement in mitigation and monitoring activities with particular

emphasis on addressing the requirements of the Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, and sage-grouse conservation. The committee will also examine ongoing research and scientific studies attempting to understand the behavior and relationship between wildlife and wind energy developments. The technical steering committee would be an expansion of the IWETT and would consist of interagency wildlife and other resource professionals and Windland. Final decision authority regarding actions recommended by the technical steering committee would rest with the BLM Burley Field Office Manager.

Alternative D, Modification of Alternative C (Environmentally Preferred Alternative): Federal environmental quality regulations (40 CFR 1505.2 (b)) require that an agency identify the "environmentally preferable" alternative or alternatives in the ROD. Alternative D is the environmentally preferable alternative. Alternative D would modify Alternative C by reducing the number of turbines, concentrate them in the center of the mountain ridge, reduce the construction impacts, and therefore, reduce impacts to the resources.

The premise of Alternative D is elimination of turbines from a portion of the sage-grouse habitat (leking, nesting, brood rearing, and winter range) while still maintaining an economically viable project. Because of the infrastructure costs involved with the project (i.e., turbines, roads, powerlines, substation), Windland has determined that 66 turbines in the 1.5 + MW size range would be necessary for an economically viable project. Concentrating the turbines along the center ridge of Cotterel Mountain would be the best way to obtain this number of turbines while affecting the fewest resources. In addition, it would concentrate the project features on the central ridge, leaving the east ridge undeveloped.

Alternative D would use the same size range and types of wind turbines as those proposed under Alternative C. Under Alternative D, a range of 66-82 turbines would range in generation capacity from 1.5 to 3.0 MW. Tower height for the turbines would range from 210 feet to 262 feet, with maximum blade height ranging from 325 to 426 feet above the ground. Rotor diameters would range from 230 feet to 328 feet (77-100 meters).

The wind turbines, substations, and transmission interconnect line would be the same for Alternative D as described under Alternative C.

Under Alternative D, the Proposed Project would require the reconstruction of about 2.9 miles of road and the construction of about 14.5 miles of new roads. Total estimated cut volume for road construction would be approximately 2,080,000 cubic yards. The estimated fill volume would be approximately 2,275,000 cubic yards. The total construction impact area would be about 282 acres. Following the reclamation of construction impact areas, the final Proposed Project would occupy an area of about 160 acres.

Public access under Alternative D would be similar to Alternative C along the central ridgeline and turbine string. However, under Alternative D there would be no road

construction or turbines sited along Cotterel Mountain's east ridge. The lower portion of the existing Cotterel Mountain summit road would have minor modifications made to improve safety. The existing Cotterel Mountain summit access road and primitive jeep trails along the east ridgeline would remain unchanged and would continue to be open to the public.

Required on-site monitoring, monitoring, adaptive management, and compensatory (off-site) mitigation would be the same for Alternative D as described under Alternative C.

V. SUMMARY OF ENVIRONMENTAL IMPACTS

The FEIS analyzed impacts from the four alternatives described above. Impacts were analyzed in the following resource areas: climate and air quality; geology; soils; water resources; noise; biological resources, including vegetation and wildlife; special status species, including endangered, threatened, candidate, sensitive, and watch list species; historic and cultural resources; American Indian concerns; socioeconomics; lands and realty; recreation; livestock grazing; visual resources; hazardous materials; and fire management. Estimated impacts were generally low and very similar for the three action alternatives for climate and air quality, geology, soils, water resources, noise, historic and cultural resources, American Indian concerns, socioeconomics, lands and realty, recreation, livestock grazing, hazardous materials, and fire management. The environmental consequences of the Proposed Action and alternatives to the Proposed Action are briefly discussed and then summarized and compared in Table 1 on pages 14 to 18.

BIOLOGICAL RESOURCES

Vegetation

The primary impacts on vegetation associated with the Proposed Project are tied to the vegetation community affected and the area of surface disturbance identified for each alternative. Although the type of surface disturbance would be similar for each turbine location and roadway, the impacts would be dependent on the number of acres of associated vegetation, as well as the number and distribution of turbines and roadways proposed under each of the alternatives.

Wildlife

A detailed report on probable impacts of this Proposed Project is provided in the Proposed Project technical report for biological resource impacts (Sharp et al. 2005). There are no similar operating wind projects located on the common landforms (long, narrow ridge with cliffs), in the region (southeast Idaho), or within specific habitats (sagebrush and mountain mahogany) that exist on Cotterel Mountain. As a consequence, there is no specific case history available to use in predicting the impacts of this Proposed Project on wildlife. Thus, this impact analysis relies on the experience and data from other western wind plants and in some cases, midwestern wind plants.

Potential impacts to wildlife were analyzed in terms of: (1) local populations, (2) surrounding area populations, and (3) landscape populations. Local impacts are those that are anticipated to result from the Proposed Project on-site. Surrounding area impacts are those that may affect connected or adjacent populations, migrations, habitat use, or "ripples" from the local effects.

Threatened and Endangered Species

The gray wolf (Threatened, nonessential population) and bald eagle (threatened) are the only two listed species with potential to occur on Cotterel Mountain and which could be affected by the Proposed Project. Only two bald eagles were observed during the baseline study in the fall of 2003. Wolves or their signs were not observed during the baseline study, and there are no records of wolves on Cotterel Mountain or south of the Snake River. A complete analysis of Proposed Project impacts to bald eagle and gray wolf are detailed in a biological assessment (BA), which was prepared concurrently with the EIS. This BA was submitted to the USFWS, Chubbuck Office, with a recommendation that the project may affect, but was not likely to adversely affect, bald eagles or gray wolves. USFWS responded with a letter of concurrence with BLM's recommendation on May 10, 2006.

Visual Resources

Impacts to visual resources would occur over the short term during construction and over the long term during operation of the project.

During construction the presence of construction equipment, both stationary and under operation could attract the eye of the casual observer. Equipment laydown areas would be dispersed throughout the Proposed Project area and would impact visual resources to different degrees depending on their specific locations. The direct impacts associated with the presence of equipment and facilities in these areas would be short-term because they would only operate for the construction phase of the project. The footprint left by equipment laydown areas would create a contrast in the surrounding vegetation after the construction phase due to the operation of the laydown areas. Grading and revegetation of the laydown areas after the construction phase would reduce visual impacts from laydown area footprints over the long-term.

Cranes used to raise the towers would be visible from inside and outside of the Proposed Project area. The greatest visual impacts would result when a crane is observed from sensitive areas, such as the community of Albion and SH-77. Although the cranes would be operating within a Class IV area, they could be visible from the Class II designated area to the southwest.

Construction of the transmission interconnect line would be visible from the north and east side of the Proposed Project area. The transmission interconnect line would pass over SH-81 and its associated scenic corridor. Construction crews and equipment would be visible to the public in this area and may result in visual impacts. Construction crews and equipment would be visible from the scenic corridor associated with SH-81, resulting in a visual impact. The majority (approximately 15 miles) of the interconnect line would parallel the existing Raft River Transmission line where the Proposed Project interconnect line parallels the Raft River

line. Impacts would be minimal or unnoticeable to the casual observer where the transmission line parallels the existing one.

During operation of the project the wind turbines would be visible from both the west and east sides of Cotterel Mountain. The wind turbines would reside within a Class IV designated area, but would be visible in the middle-ground zone from a Class II designated area to the west that coincides with the Albion Valley and the scenic corridor associated with SH-77. In addition, the turbines would be visible from the east along SH-81 and the community of Malta. The wind turbines would be visible from these areas and others resulting in a change to the character of the ridgeline landscape. Contrast would result when viewing the center string from the Albion and Raft River Valleys. Currently the ridgeline texture appears smooth and undulating. Operation of the center string would alter texture of the ridgeline. This alteration would reduce the bold contrast between the ridgeline and the sky. Rotation of the turbine blades would draw the attention of the casual observer from the rural valley foreground to the ridgeline, which would appear more industrial.

Table 1. Summary Comparison of Resource Impacts for All Alternatives.

Resource Issue	Alternatives			
	A	**B**	**C**	**D**
BIOLOGICAL				
Vegetation				
Removal of vegetation	No change to the existing vegetation beyond the levels identified in the Cassia RMP	Up to 368 acres of vegetation would be directly affected by construction of all Proposed Project features Up to 165 acres reclaimed 203 acres of permanent impact to vegetation	Up to 350 acres of vegetation would be directly affected by project construction of all Proposed Project features Up to 147 acres reclaimed 203 acres of permanent impact to vegetation	Up to 282 acres of vegetation would be directly affected by project construction of all Proposed Project features Up to 123 acres reclaimed 158 acres of permanent impact to vegetation
Noxious weeds	No change to the existing vegetation beyond the levels identified in the Cassia RMP	Disturbance of vegetation could lead to the establishment and spread of noxious weeds, which would increase direct competition for limited resources (nutrients, water, space, etc.) with native or desired vegetation Indirectly, these species could augment the amount and continuity of fuels, which could lead to increased fire return intervals	Same as Alternative B	Same as Alternative B

Table 1. Summary Comparison of Resource Impacts for All Alternatives.

Resource Issue	Alternatives			
	A	**B**	**C**	**D**
Wildlife				
Loss of big game winter range	There would be no adverse impact	Winter range would be permanently eliminated by up to 105 acres of mule deer habitat and 194 acres of bighorn sheep habitat Mountain lions could be initially displaced by construction activities, but would likely habituate to Proposed Project features over time	Winter range would be permanently eliminated by up to 62 acres of mule deer habitat and 162 acres of bighorn sheep habitat Impacts to mountain lions would be the same as Alternative B	Winter range would be permanently eliminated by up to 58 acres of mule deer habitat and 115 acres of bighorn sheep habitat Impacts to mountain lions would be the same as Alternative B
Big game displacement and/or stress	There would be no adverse impact	Displacement of big game from Proposed Project construction and operation. Potential displacement impact from increased human activity.	Same as Alternative B	Smaller project size would result in reduced area of displacement and fewer areas of improved public access Displacement would still occur but on a smaller scale
General wildlife habitat	There would be no adverse impact	Wildlife could be negatively affected by increased traffic and human presence on Cotterel Mountain Permanent loss of 203 acres of potential habitat	Same as Alternative B	Permanent loss of 158 acres of potential habitat Smaller project size would result in reduced area of displacement and fewer areas of improved public access

Table 1. Summary Comparison of Resource Impacts for All Alternatives.

Resource Issue	Alternatives			
	A	**B**	**C**	**D**
Estimated annual avian and bat mortality due to collision with wind towers or power lines	There would be no adverse impact	Raptors = 0-63 mortalities All birds = 0-934 mortalities Bats = 0-667 mortalities Upper end mortality estimates are based on total avian numbers from point counts, mortality at other operating wind projects, and total rotor swept area with an operating capacity factor of 35% applied. This estimate assumes that all birds flying within the rotor swept area would be killed (worst case scenario)	Raptors = 0-81 mortalities All birds = 0-1188 mortalities Bats = 0-848 mortalities Assumes larger rotor swept area Same as Alternative B	Raptors = 0-66 mortalities All birds = 0-968 mortalities Bats = 0-691 mortalities Assumes larger rotor swept area Same as Alternative B
Nesting raptors	There would be no adverse impact	Wind turbines would be sited greater than ¼ mile from the three golden eagle nests Blasting during nesting season could result in nest abandonment Resident hunting raptors may avoid the vicinity of the turbines Habitat lost to construction would result reduced prey base	Same as Alternative B Same as Alternative B	Same as Alternative B Same as Alternative B
Loss of sage-grouse winter range	Existing situation expected to continue	Direct loss of 68 acres Displacement from up to 6,435 acres	Direct loss of 48 acres Displacement from up to 5,716 acres	Direct loss of 34 acres Displacement from up to 4,585 acres

Table 1. Summary Comparison of Resource Impacts for All Alternatives.

Resource Issue	Alternatives			
	A	**B**	**C**	**D**
Loss of sage-grouse nesting habitat	Existing situation expected to continue	Direct loss of 33 acres Displacement from up to 5,605 acres	Direct loss of 28 acres Displacement from up to 4,890 acres	Direct loss of 15 acres Displacement from up to 3,194 acres
Displacement of sage-grouse from lek sites	Existing situation expected to continue	Direct loss of 84 acres Displacement from up to 3,395 acres	Direct loss of 77 acres Displacement from up to 3,345 acres	Direct loss of 52 acres Displacement from up to 3,255 acres
Displacement of bats from hibernation sites	Existing situation expected to continue	Noise and percussion from blasting, drilling, digging, and movement of large vehicles could displace roosting, breeding, or hibernating bat species	Same as Alternative B	The smaller project would require less blasting resulting in a reduced potential for displacement of roosting, breeding, or hibernating bat species
Threatened and Endangered Species				
Bald Eagle	There would be no adverse impact	Small potential for direct mortality or injury from electrocution, collisions with transmission lines, or turbine blades	Same as Alternative B	Same as Alternative B
Gray Wolf	Gray wolves are not known to occur on Cotterel Mountain; therefore, there would be no adverse impact	Same as Alternative A	Same as Alternative A	Same as Alternative A

Table 1. Summary Comparison of Resource Impacts for All Alternatives.

Resource Issue	Alternatives			
	A	**B**	**C**	**D**
BLM Sensitive Species	Existing situation expected to continue	Cliff chipmunk populations would be affected during construction. These areas would likely be avoided or abandoned, but once construction is complete and disturbance levels decline, cliff chipmunks would be expected to reoccupy habitats near the facility Nesting and non-breeding golden eagles could be adversely affected not only by construction disturbance, but also from potential collisions with turbines	The impact of Alternative C to special status species would be similar to those expected to occur under Alternative B, with slightly smaller areas of permanent and temporary impacts from project construction and fewer turbines	The impact of Alternative D to special status species would be similar to those expected to occur under Alternative B and C, with slightly smaller areas of permanent and temporary impacts from project construction
VISUAL RESOURCES				
Visual Resources	There would be no effect	Vehicle and heavy equipment traffic associated with project construction could result in short-term impacts The operational phase of the project would have long-term impacts to surrounding view sheds and communities Permanent impacts to visual resources would be greatest under this alternative	Short-term impacts to visual resources would be similar to Alternative B, but with fewer trips needed during the construction phase Long-term impacts would also be slightly less based on the reduced number of turbines	Short-term impacts to visual resources would be the lowest under this alternative, and would require the fewest trips during the construction phase Long-term impacts would also be lowest, based on the reduced number of turbines

VI. MANAGEMENT CONSIDERATIONS

PROPOSED ACTION AND ALTERNATIVES

The merits of all alternatives were considered in arriving at this decision. The potential environmental impacts as identified in the FEIS, expected costs, the practical implementability and enforceability of the available alternatives, agency comments and consultation, tribal comments and consultation, and public comments provided during the preparation of the FEIS were considered in arriving at this decision.

Alternative A, the No Action alternative, was not selected because the benefits of the Proposed Project outweighed the impacts from the construction and operation of the Proposed Project. Under this alternative, the Proposed Project would not be constructed. The direct implications of No Action are that the potential environmental impacts of the Proposed Project would not occur. There would be a loss of economic benefits associated with the project, including 1) a contribution to a safe and reliable source of electrical energy to ease possible future energy shortages in the Northwest, 2) purchase of equipment and materials, 3) proceeds from the grant of a right-of-way by the BLM, 4) construction and labor expenditures including indirect (multiplier effect) economic benefits, and 5) ongoing expenditures by the power facility and transmission line operators for operations and maintenance. There would also be a loss of benefits to the economy of Minidoka and Cassia counties. This alternative could have a direct and indirect adverse impact on energy development, production, supply, and/or distribution.

Alternative B, the Proposed Action Alternative, was not selected because of potential significant impacts to visual resources and the views from the Pomerelle Mountain Resort access road and the City of Rocks Back Country Byway (SH-77). In addition, impacts under the Proposed Action Alternative would have resulted in construction of highly visible road cuts across steep west facing slopes near the summit of Cotterel Mountain.

Under Alternative C, the Agency's Preferred Alternative, the relative benefits of granting or not granting the ROW were weighed and it is concluded that the public interest is best served by granting the ROW. The Agency's Preferred Alternative will benefit the public by improving the region's ability to meet current and future energy demands. In this decision, the contribution of the wind energy project and associated transmission lines to generate and deliver electrical power outweighs the environmental impacts that would be addressed through protective measures. It is the BLM's decision to proceed with the Cotterel Wind Power Project and associated transmission lines as described in Alternative C.

Alternative D, the Modification of Alternative C, was not selected because the granting of a ROW under this alternative would result in less power being produced while only providing a small decrease in the potential environmental impacts. Alternative C will result in 16-19 percent greater production capacity than that under Alternative D. In general Alternative D would result in an approximately 17 to 22 percent decrease in estimated ground disturbance and a 6 to 37 percent decrease in estimated measurable impacts to environmental resources (Table 2).

Table 2. Summary Comparison of Project Features and Environmental Resource Impacts between Alternative C and Alternative D.

Project Feature	Alternative C	Alternative D	Percent Difference D to C
Project nameplate (In MW)	147-243	123-198	16%-19% less
Project roads (In miles)	24.4	19.3	21% less
Total length of turbine string (In miles)	14.5	11.6	20% less
Temporary ground disturbance (In acres)	147	122	17% less
Permanent disturbance (In acres)	203	158	22% less
Permanent vegetation loss (In acres)	203	158	22% less
Mule deer winter range (In acres)	62	58	6% less
Estimated avian fatalities per turbine per year	0-274	0-230	0%-16%
Sage-grouse habitat loss (In acres)	181	114	37 % less
Potential sage-grouse displacement (In acres)	23, 977	19,768	18% less

Two alternatives were considered (Figure 2.2-13) and not analyzed. Alternative E was developed by the identification of issues through public scoping, agency scoping, the IWETT, government-to-government consultation, and interdisciplinary resource recommendations and is basically a modification of Alternative D. It was proposed as a possible method of further minimizing potential impacts to sage-grouse habitat and habitat use while maintaining an economically viable wind energy development. Alternative E, while avoiding the most direct suspected impacts to sage-grouse lek use and associated nesting at several key locations on the mountain, would effectively reduce the length of the turbine string to approximately 8.4 miles and reduce the number of turbines that could be constructed to a range of 40-49. This is substantially less than the minimum number of wind turbines disclosed by Windland as being economically viable to construct (66 turbines), operate, and maintain at the Cotterel Mountain site.

Windland's analysis and disclosure of a minimum size project is based on the cost of infrastructure (i.e. roads, substation, power transmission, underground cabling, etc.), the cost of construction on a remote, isolated mountaintop, the cost of monitoring and mitigation, and the cost and time required for permitting on public land. It is further based on the time required to amortize the capital investment of a project. Alternative E would have essentially the same infrastructure costs as Alternative D with approximately 60 percent of the production potential. Accordingly, Windland states that it is not possible to recoup costs in a reasonable amount of time or achieve the rate of return necessary for such a large investment, nor would it be possible to obtain financing on acceptable terms. While Alternative E is technically feasible and could be constructed, it does not meet the Council on Environmental Quality (CEQ) test of a reasonable alternative since it is not economically viable. Therefore, Alternative E does not meet the purpose and need stated in the FEIS. For these reasons,

Alternative E is not carried forward or analyzed in detail. It should be noted that in CEQ's definition of "reasonable alternative," technical and economic aspects are linked. If a proposed project does not meet one or the other, it is not feasible to construct and therefore, not a reasonable alternative.

Alternative F was developed by the identification of issues through public scoping, agency scoping, the IWETT, government-to-government consultation, and interdisciplinary resource recommendations. This alternative further distances the wind energy facilities from sage-grouse use areas. The premise of Alternative F is to site the wind turbines based on the best available science, combined with professional judgment, for the protection of sage-grouse and their habitat. Studies regarding the lifecycle of sage-grouse have shown that nesting and brood rearing generally take place within a 1.8-mile radius of active leks. There is also some scientific information on lesser prairie chickens to suggest that they may avoid tall structures. Therefore, it has been suggested by some that placement of a wind power project within that 1.8 mile radius of leks may have an adverse affect on the lifecycle activities of sage-grouse.

Application of a 1.8-mile no development zone around known, active sage-grouse leks would limit the siting of the wind generation facility to the 3.6-mile section of the central Cotterel Mountain ridgeline and reduce the number of constructible turbines to approximately 20. This requirement would render Alternative F not economically feasible as a commercial wind generation facility and inconsistent with the purpose and need stated in the FEIS. Therefore, Alternative F has been considered but is not being analyzed in detail.

RELATIONSHIP TO BLM POLICIES, PLANS, AND PROGRAMS

Projects must be consistent with BLM's regional and local plans. BLM's existing Cassia RMP limits ROW to existing facilities and locations and does not address wind energy development. At the time of preparation of the Cassia RMP, wind was not considered a potential energy source in Idaho, and hence Cotterel Mountain was not considered a wind energy site. Because the Proposed Action is not consistent with the Cassia RMP, the Agency's Preferred Alternative will require an amendment to the RMP to allow the granting of a ROW for wind energy development on Cotterel Mountain.

As part of the environmental review process and in accordance with Section 106 of the National Historic Preservation Act, BLM consulted with the Idaho State Office of Historic Preservation (SHPO), the Shoshone-Bannock Tribes, and the Shoshone-Paiute Tribes regarding historic properties and potential sites of cultural significance, which might be affected by the project.

VII. MITIGATION MEASURES AND MONITORING

Windland has committed to all practical methods to reduce environmental harm to biological and cultural resources through project design, stringent monitoring, and mitigation requirements. Windland shall conduct its operations in an environmentally safe manner and in compliance with all applicable statutes, regulations, and standards. Construction of the project will also be in accordance with the terms and conditions of the ROW grant and the

POD, which is attached to and made a part of the ROW grant and to this ROD (see Appendix A).

Environmental Protection Measures were developed in cooperation with the BLM, Idaho Department of Fish and Game, and the Office of Species Conservation in the Office of the Governor of the State of Idaho and incorporated in the Agency's Preferred Alternative (Alternative "C"). These approved monitoring measures, described in Appendix A, are incorporated in this ROD and will be included in the ROW grant. These measures shall be employed throughout the implementation phases of the project. All practical means to avoid or reduce environmental harm will be adopted, monitored, and evaluated, as appropriate.

Windland shall designate a field contact representative (FCR) prior to the start of construction who shall be subject to approval by the BLM. The FCR shall be responsible for ensuring compliance with protective measures for the biological and cultural resources. The FCR will have the authority to halt construction activities if the project is not in compliance with mitigation required by the BLM. The FCR shall keep a record of the extent of all areas permanently and temporarily disturbed by construction. This record will be the basis for determining any monetary compensation to be paid by Windland to the BLM. For all areas disturbed by construction, a habitat restoration plan shall be developed by an interdisciplinary team, approved by the BLM, and implemented by Windland. The restoration plan shall include a schedule for monitoring and assuring the success of restoration, including the removal of invasive species, acceptable to the BLM. Upon completion of construction, the responsibilities of the FCR will accrue to Windland's Project Manager.

VIII. PUBLIC INVOLVEMENT

In December 2002, a scoping statement was mailed to government agencies, municipalities, Native American Tribes, grazing permittees, lease operators, industry representatives, environmental organizations, and individuals having a potential interest in the Proposed Project. Local and regional media also received the scoping statement and a press release. The scoping statement explained the Proposed Project and requested comments regarding issues and concerns that should be addressed in the Draft EIS. Three public scoping meetings were held in the towns of Albion on January 7, 2003; Burley on January 8, 2003; and Boise, Idaho, on January 9, 2003, with 135 total attendees. Initial scoping comment letters were encouraged through February 21, 2003, to help the BLM identify issues that would guide the formulation of alternatives to the proposed action. Written comments were received from 47 individuals, three Federal and state agencies, and five interest groups. A list of all respondents is presented in Chapter 5 of the EIS.

On June 21, 2005, a Notice of Availability (NOA) was published in the Federal Register and the Draft EIS was made available to the public. The publishing of the NOA in the Federal Register marked the beginning of a 90-day public comment period for the Draft EIS. During the comment period, interested parties were invited to submit comments on the Draft EIS to the BLM. A second round of public meetings were held to present the Draft EIS to the

public, to describe its content and to receive public comments. These public meetings were held: July 26, 2005 in Burley; July 27, 2005 in Albion; and July 28, 2005 in Boise.

The FEIS incorporates revisions to the Draft EIS made in response to comments submitted during the 90-day public comment period. During the public comment period, 72 written comments were received by the BLM.

NEPA requires Federal agencies to identify and analyze significant issues related to a proposed action and its alternatives. Significant issues primarily serve as the basis for developing and comparing alternatives. While the focus of the analysis is on significant issues identified, all issues brought forward through the scoping process are considered. The following is a list of significant issues identified by the public, Shoshone Bannock Tribes, the Shoshone Paiute Tribes, the BLM, and other governmental organizations that were used to develop alternatives and assess impacts of the Proposed Project. The significant issues addressed in the FEIS include:

- Sage-grouse – Commenters were concerned that the Proposed Project would result in the loss of sage-grouse habitat, loss of nesting habitat, and disturbance to leks. Grouse could also be killed by colliding with wind turbines.

- Tribal treaty rights or heritage links to public lands – The Tribes expressed a desire that these be maintained and protected.

- Migratory birds including raptor migration – Commenter expressed concern over migratory birds being killed by colliding with wind turbines.

- Public access – Commenter expressed the need to continue to allow and protect public access to Cotterel Mountain.

- Visual resources – Commenter expressed concern about the visual impact to the town of Albion and other communities, as the Proposed Project would be in close proximity to towns, ranches, and homes.

- Conformance with the Cassia RMP – Internal review disclosed the proposed action was not in conformance with the Cassia RMP and an amendment would be required.

Other issues and concerns were identified by the public, the BLM, Shoshone Bannock Tribes, Shoshone Paiute Tribes, and other governmental organizations regarding the Proposed Project and its alternatives. They are listed below and described in more detail in Chapter 3 of the FEIS.

- Air Quality
- Ridgeline and cultural significance to Tribes
- Historical migration routes of Tribes
- Geology

- Soils
- Water Resources (including surface, groundwater, and springs)
- Noise/vibration/harmonics
- Vegetation
- Noxious weeds
- Wildlife
- Wind turbine effects on birds and bats
- Direct and indirect wildlife habitat loss
- Mule deer winter range
- Increased human activity on Cotterel Mountain and its effects on wildlife
- Threatened, Endangered, and Sensitive Species and their habitats
- Cultural and historical resources
- Socioeconomics
- Land use
- Private land values
- Increased traffic on local roads during construction
- Livestock grazing
- Recreation

The comments received during the public comments period and responses to the comments are provided in Appendix H of the FEIS.

IX. FINAL AGENCY ACTION

Plan Amendment

It is the decision of the BLM to approve the Proposed Amendment to the Cassia Resource Management Plan. The Proposed Plan Amendment and related Environmental Impact Statement (EIS) were issued in March 2006. The decision to amend the Cassia Resource Management Plan is effective upon approval of this ROD. The Director has responded to eight protests on the Proposed Amendment and, in accordance with BLM regulations, 43 CFR 1610.5-2, the decision of the Director is the final decision of the Department of the Interior as to those protests.

Approved by:

T.C. Lonnie 8-15-06

Assistant Director — Date
Bureau of Land Management
U.S. Department of the Interior

Right-Of-Way Grant Authorization

It is my decision to grant the application (IDI-33676) of Windland, Inc., for a right-of-way subject to the grant, terms, conditions, stipulations, plan of development, and environmental protection measures developed by the Department of the Interior. This decision is in full force and effect on the date this Record of Decision is signed.

This decision is the final administrative determination of the Department of the Interior and is not subject to appeal (43 CFR part 4.410 (a)(3)).

Approved by:

John Baxter 8-15-06

U.S. Department of the Interior — Date

APPENDIX A

I. PLAN OF DEVELOPMENT (POD)

II. ENVIRONMENTAL PROTECTION MEASURES

I. Plan of Development

Cotterel Wind Power Project
Plan of Development

August 2006

Table of Contents

List of Figures

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1.0 EXECUTIVE SUMMARY

This document is the Plan of Development (POD) for the Cotterel Wind Power Project. This project will be located mostly on public land administered by the Bureau of Land Management (BLM), United States (U.S.) Department of the Interior. A small portion of the project will be on lands administered by the Idaho Department of Lands (IDL). As such, this plan is a required component of the BLM right-of-way (ROW) grant and IDL lease for the project.

The POD describes how the project will be built, operated, and decommissioned in a manner consistent with the requirements of the BLM/IDL. It is organized into four main sections:

- General project information
- Construction of the project
- Operation of the project
- Decommissioning of the project

Section 2 provides basic information on wind energy projects in general, and the Cotterel Wind Power Project in particular. The purpose is to provide the reader with a basic understanding of the project and the various parties involved with its development.

Sections 3, 4, and 5 describe activities performed in the three phases of the project: construction, operation, and decommissioning. Additional details on the avian impact monitoring are included in the attached Environmental Protection Measures.

This POD is part of the BLM Record of Decision (ROD) and ROW grant. Windland will utilize specific adaptive management practices to adjust the POD as experience is gained. The POD will be updated as necessary as agreed by the project participants.

2.0 PROJECT DESIGN

This section provides information on the project design, participants, and components.

2.1 DESCRIPTION OF PROJECT

The Cotterel Wind Power Project is a 200 MW facility consisting of up to 98 wind turbines. The annual energy output from this facility will be approximately 650,000 MW hours.

The project site is located on Cotterel Mountain in Cassia County, Idaho, between the towns of Albion and Malta. The majority of the land is administered by the BLM. Two sections are administered by the IDL. The anticipated layout of the project is shown in Figure 2-1, with more detailed maps provided in Appendix B. The ROW grant has been assigned an identification number of IDI-33676 by the BLM.

As mentioned above, the project will consist of up to 98 wind turbines. Wind turbine is the collective term for the equipment that captures the kinetic energy in the wind and converts it to electrical generation. The major components include the blades and hub (collectively called the rotor), the nacelle, and the tower. Inside the nacelle are the gearbox, generator, and various other components critical for operation of the wind turbine. Depending upon the turbine design, the transformer will be located either in the nacelle or on the ground next to the tower. Figure 2-2 and Figure 2-3 are general schematics of typical wind turbines (Figure 2-3 is from *How Wind Turbines Work*, U.S. Department of Energy, 2004).

The wind turbines on Cotterel Mountain will be placed in locations that will provide the best balance of energy capture, safe construction, and minimum impacts on the environment. The environmental impacts of the project will be closely monitored during the construction, operation, and decommissioning of the project, as described in I. POD and II. Environmental Protection Measures; A. Sage-grouse Monitoring Protocol, B. Avian Fatality Monitoring Protocol, and C. Raptor Nesting and Migration Monitoring Protocol.

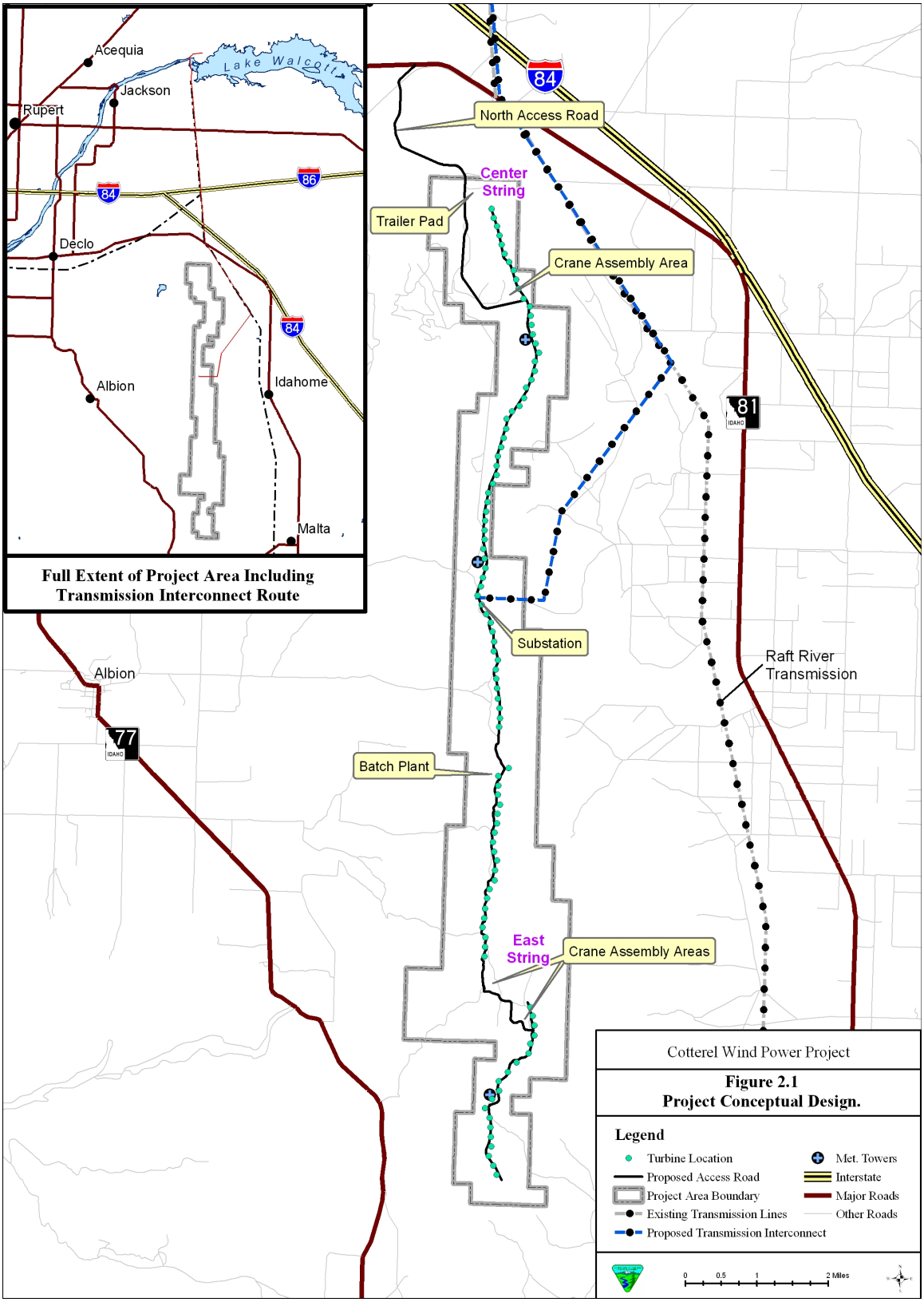

Figure 2-1. Conceptual Design.

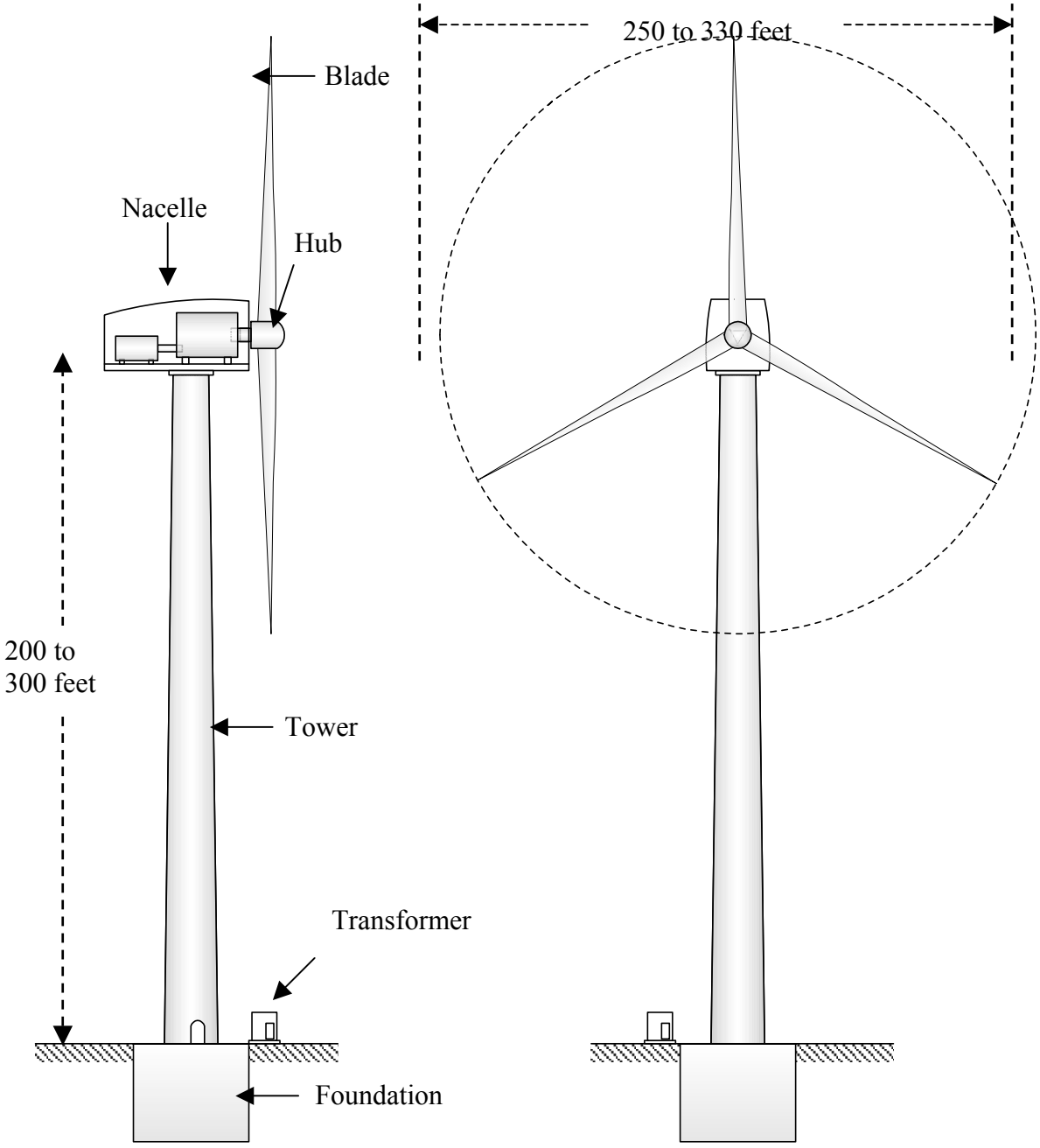

Figure 2-2. General Wind Turbine Components.

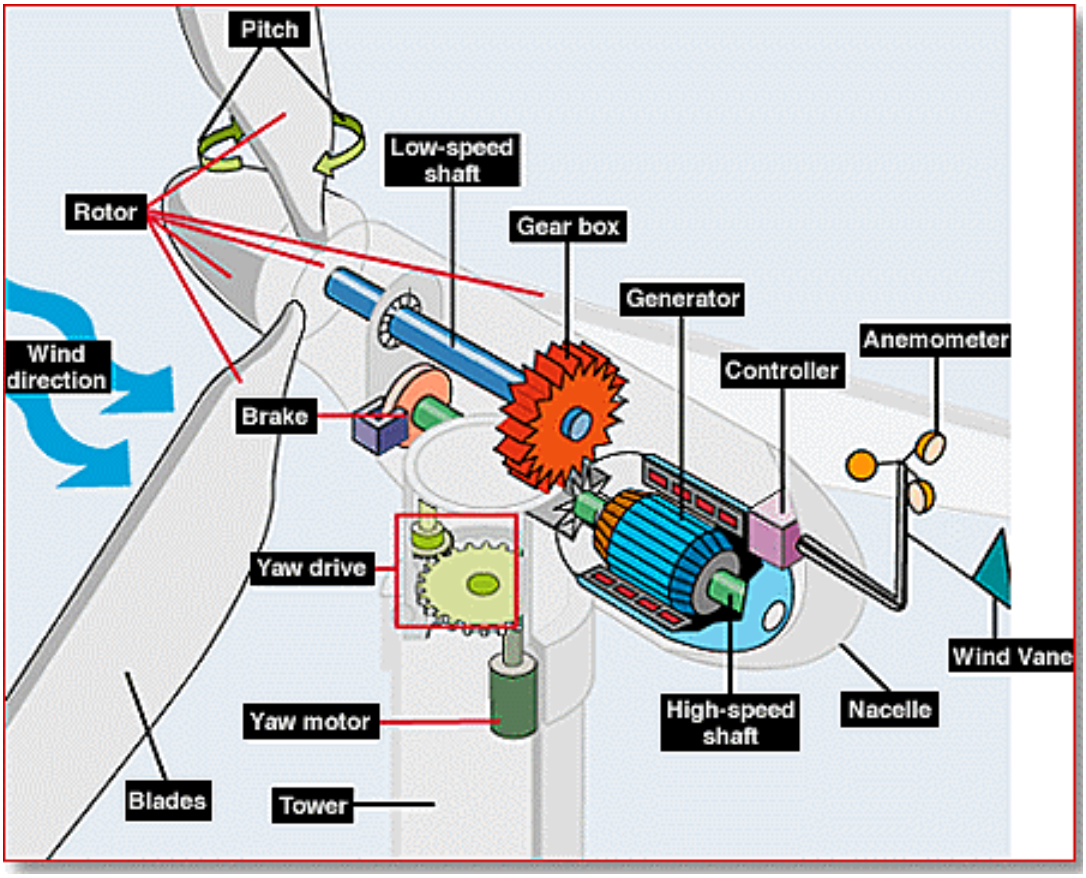

Figure 2-3. General Wind Turbine Nacelle Components (US DOE).

Wind turbines operate autonomously, based on wind speed and direction data. When the anemometer on a wind turbine senses winds within the operational range of the turbine, and power sensors find the electrical grid available to accept power, the wind turbine will turn itself on and begin to generate power. It will continue to generate until the wind speed is above or below the turbine operational range, the grid is no longer available, or the turbine detects a fault with one of its components. If a fault occurs, the turbine will shut itself down and, depending upon the nature of the fault, either wait for the condition to clear itself, or signal for maintenance.

Wind turbines are connected together through an underground electrical collection system to a central substation, where the power is raised to the voltage of the electrical grid. The turbines sit atop large concrete and steel foundations. Access roads interlink each turbine site. An Operations and Maintenance (O&M) building will be built on State of Idaho endowment land at the north end of the project. More information on each major project component is provided in Section 3.2.

2.2 DESCRIPTION OF ENVIRONMENTAL IMPACT STATEMENT

In March 2006, a Final Environmental Impact Statement (FEIS) was issued for the Cotterel Wind Power Project. The FEIS was assigned Serial Number FEIS 06-07 by the BLM. The FEIS is the culmination of studies and testing that began in early 2002.

The issues identified from interested parties for both the FEIS and this plan include:

- Sage-grouse conservation
- Maintaining and protecting tribal treaty rights and heritage links to public lands
- Protection of avian species, including migratory birds and raptors
- Threatened and Endangered Species protection
- Maintaining public access
- Visual resources protection
- Consistency with the Cassia Resource Management Plan

Several base studies and surveys have been performed for the project, and are discussed and referenced in the FEIS. Some key findings of the FEIS incorporated into this plan are:

- Sage-grouse lek locations
- Natural spring locations and sensitivities
- Sensitivity of pediocactus
- Requirement for noxious weed control

The FEIS is the base reference for details on the environmental aspects of the site, and the studies done in preparation of the project. This plan uses the results from the FEIS and best industry practices to plan the construction, operation, and decommissioning activities for the project.

2.3 PROJECT TEAM

Windland, Inc. is the applicant, holder of the ROW grant, and party responsible for implementing the POD. Supporting the development of the project are:

- **URS:** Third-Party Contractor for DEIS and FEIS
- **Black & Veatch**: Project Engineering and POD
- **Power Engineers**: Transmission and Substation Engineering

2.4 HEALTH, SAFETY, AND ENVIRONMENTAL COMMITMENT AND POLICY

Windland agrees that they and their employees, partners, and contractors are accountable for Health and Safety standards and protection of the environment.

2.5 ADAPTIVE MANAGEMENT STRATEGY

Adaptive management is a core management principle of this POD. It has guided planning for the design, development, management, and operation of the Cotterel Wind Power Project. It is intended to improve decisions regarding the planning, design, development, management, and operation of large engineering projects in relationship to their setting.

A general overview of adaptive management is in the *Cotterel Wind Power Project Final Environmental Impact Statement, March 2006*. Adaptive management is based upon the premise that ecosystems are complex and inherently unpredictable over time. It approaches

the uncertainties of ecosystem responses by evaluating and optimizing management actions using a systematic method from which "learning over time" is a critical tool. For the Cotterel project learning and adapting are based on a rigorous process of long-term monitoring and incorporation of best available science to determine impacts to wildlife.

The following is a synopsis of important characteristics of adaptive management identified by the Panel on Adaptive Management for Resource Stewardship, National Research Council, National Academy of Sciences, in its 2004 book titled *Adaptive Management for Water Resources Planning*. The Research Council's book consists of a review and analysis of the adaptive management literature from all fields of the past 20 years.

- **Management Objectives**. Management is an iterative process; competing paradigms among cooperating scientists and differences among stakeholders are inherent and unavoidable.
- **Range of Management Choices**. Paradoxically, existing data rarely point to a single best management policy. There are many considerations that go into good management, including knowledge gained over time.
- **Learning**. A mechanism for capturing and incorporating learning into future decisions should be a part of the long-term process.
- **Collaboration**. A collaborative structure should exist to assist in advising and feeding back to project owners and federal managers.
- **Modeling**. Models are helpful and have limits. It is important that everyone understand model assumptions and limits so that model results are not equated with reality.
- **Monitoring**. Monitoring should precede the project, be a part of project design, and continue after it is built.

The Cotterel FEIS was preceded by three years of biological monitoring, several years of meteorological monitoring, engineering studies, inter-agency and intra-agency discussions of potential issues and impacts, review of the known scientific literature, review of the histories of other U.S. and foreign wind energy projects, consultation with manufacturers of wind turbines, and consultation with seasoned professionals from many disciplines, including engineering, biology, hydrology, and meteorology.

The operation of the project will be continuously monitored, mechanically, electrically, meteorologically, and biologically. As information about the turbines and their relationships to the natural environment become available from monitoring over a meaningful duration of time, then adaptive management will be used to identify and recommend potential mitigation for emerging problems. As a result, the Cotterel Wind Power Project becomes a reference project for other wind projects proposed in the Western U.S.

It is important to recognize that the terms 'wind farm', 'wind project', etc. can be misleading. On Cotterel Mountain, turbines will be aligned in a linear string approximately one-quarter mile from one another and extend approximately 15 miles along the ridgeline. Each individual wind turbine is a separately controlled and monitored electrical generator. Each turbine occupies a unique air and ground space, or habitat, experiences unique wind and

weather, and is exposed to the migrations and flights of different birds and bats at different times. It is through understanding of the individual behavior of each turbine in relationship to its location through rigorous monitoring that will provide the opportunity to incorporate adaptive management principles.

The turbines on Cotterel Mountain will be capable of generating from 1.5 to 3.0 MW of electricity each. And each, depending on its location and the wind, will average from 30% to 35% of the output over the course of a year (its capacity factor). Depending on the model and manufacturer, each turbine will reach 325 to 465 feet in height from the ground to the tip of the highest blade, and will have a blade or rotor diameter of some 230 to 330 feet. In summary, each is an independent generating plant.

Adaptive management strategies in combination with long term monitoring are designed to recognize and respond to repetitive and recurring avian fatality incidents caused by individual turbines interacting with otherwise unpredictable natural events. Adaptive management strategies are not designed to permanently shut down turbines, or threaten the economic viability of the project.

By beginning early in the project planning process through pre-project monitoring, adaptive design, micrositing, lek and nest avoidance strategies, adaptive management reduces the probability of turbine operation interruptions. In addition, by continuing monitoring during construction and actual operations, a balance is reached between protecting the project's environment and assuring its ability to operate.

The following are a few examples of how adaptive management will be applied on Cotterel Mountain:

- Adaptive management will be used to refine the final location of the project access and site roads in order to avoid sage-grouse leks, nesting sites and other sensitive species. The initial design contains only a baseline from which to begin.
- Adaptive management will be used to microsite the final location of each turbine in order to avoid impacts on sage-grouse and golden eagles and their nesting sites. The initial design contains only conceptual baseline locations, not final locations.
- Adaptive management will be used to evaluate the information from long term fatality monitoring in order that the operator can make management decisions regarding the operation of individual turbines during periods of intense migrations or other hazardous conditions.
- Adaptive management will be used to respond to the needs of local livestock permittees in order to assure that their livestock are not endangered by construction activities and that access to food and water is not adversely impaired during construction.
- Adaptive management will be used to respond to local recreational, hunting, and other public uses of Cotterel Mountain to assure that multiple uses are continued without hazard to the health or safety of either the public using the recreational site or the project operators and workers employed at the site.

- Adaptive management will be used to continuously monitor the safety of workers and the public during construction of the project with a goal of zero injuries or accidents.

A Technical Steering Committee will be formed to advise on the design of mitigation measures and monitoring covered that will be funded by the compensatory mitigation fund. This committee will be responsible for recommending actions to the BLM Field Office Manager.

The intent is to ensure interagency involvement in mitigation and monitoring activities relating to migratory birds, bald and golden eagles, and sage-grouse with particular emphasis on addressing the requirements of the Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, and sage-grouse conservation. The committee will also examine ongoing research and scientific studies attempting to understand the behavior and relationship between wildlife and wind energy developments.

The Technical Steering Committee will consist of interagency wildlife and other resource professionals and Windland. This committee will be formed and chartered prior to any construction of the project.

The Core Technical Steering Committee will consist of the BLM, Windland, Idaho Department of Fish and Game, and the U.S. Fish and Wildlife Service. The Core Technical Steering Committee will be responsible for advising the BLM and Windland in several important scientific and technical areas, including:

- Evaluating impacts of the project to wildlife, including sage-grouse and raptors through scientific, statistically sound analysis and interpretation of the long-term monitoring data.
- Making recommendations to the BLM and Windland regarding possible mitigation and/or other initiatives, which may help to offset observed impacts which would be expected to result in a long-term adverse impact upon the ecosystem.
- Evaluate mitigation actions and provide oversight.

Ex Officio (Non Technical) members invited to the Technical Steering Committee meetings to dialogue and observe include the members of Native American Tribes, Local Sage-Grouse Working Group (if one is established), Cassia County, Community of Albion, Idaho Power Company, and Bonneville Power Authority.

Specific protocols for long-term avian fatality, sage-grouse, and raptor monitoring are contained in II Environmental Protection Measures.

2.6 COMMUNICATIONS PLAN

2.6.1 Bureau of Land Management

As the majority of the project site is on BLM-administered land, the BLM will play an active role during the development and construction of the Cotterel Wind Power Project. Windland

is coordinating the project design using the adaptive management approach endorsed by the BLM, and BLM representatives are being consulted at critical development stages of the project.

The BLM has appointed the Field Office Manager from the Burley, Idaho, office as the authorized officer for this project. Windland expects that this officer or designee will be present at the project site during much of the construction, and will observe construction activities to confirm they conform with this plan. The project construction manager will communicate directly with the representative on the site to keep the BLM apprised of the construction progress, and the results of environmental mitigation measures. This collaboration will continue as alternative mitigation measures are explored. Any deviations from the POD requested by Windland will be reviewed by the BLM Authorized Officer (or designee), and written approval obtained before such changes are made.

The BLM will also receive monthly reports during the construction, operation, and decommissioning of the project, containing the anticipated upcoming activities at the project and results of recent environmental monitoring. These reports are intended to maintain constant communication, and keep the BLM informed on mitigation results.

2.6.2 Idaho Department of Lands

Some of the project site land is administered by IDL. Approximately five percent of the project turbines are on IDL-administered land, as well as a portion of the project access road from Highway 81 and the O&M building. As such, Windland will also coordinate the design and construction of the Cotterel Wind Power Project with the IDL Area Manager, and will issue regular progress reports to IDL as well as the BLM. The IDL is also being consulted for the development of this plan, so that the final POD will be acceptable to both IDL and the BLM.

2.6.3 Local Government

Windland will maintain open communications with the local governments in the vicinity of the project site, including those of Cassia County, Minidoka County, City of Albion, City of Burley, and others. Informational updates will be provided to these local governments regarding activities that could impact their jurisdictions, including schedules for truck traffic and blasting. Specific coordination will be conducted for mitigation measures (such as coordination with Cassia County regarding noxious weed control).

Windland will request that each local government appoint a contact person to whom project updates will be sent. These governments will be given as much advance notice as possible for major project activities, as well as any changes to these schedules.

2.6.4 Public Information Kiosk (Interpretive Panels)

Windland understands that the development of a wind energy project on public land is of interest to many members of the general public. Windland will communicate information on the project through a website and at least one information kiosk. The information presented will include:

- Technical aspects on the project, including the rating, amount of energy generated, and equivalent number of typical homes served by the project.
- General description of activities on the site during construction and operation.
- Expected offset benefits of the project.
- Information on the environmental protection measures of the project, to demonstrate the diligence being taken to protect public lands.

By providing a kiosk, information will be provided to those members of the public interested in the project without requiring them to enter the site (and thereby enhancing public safety). The kiosk will be placed in a location near the project where it will be easily accessed by the public. An example of a public information kiosk from a wind energy project is shown in Figure 2-4.

Figure 2-4. Example Public Information Kiosk.

2.6.5 Artifacts

During the construction and decommissioning phases of the project, personnel will be alert for the unearthing of cultural, historical, or Native American artifacts. If any such potential artifacts are discovered, work will cease in that area and Windland will notify the BLM Authorized Office or IDL Area Manager (depending upon which section of land the artifacts are found) to request guidance with respect to the handling of the artifact and site. BLM/IDL will consult directly with the Idaho State Historic Preservation Office or appropriate Native American government officials.

Prehistoric and Historic Resources

Prior to construction, Eligibility Determinations and Determinations of Effect for sites identified in the inventory will be completed. Any activity planned inside the Area of Potential Effect (APE), as defined in the cultural resources inventory, will require inventory

and evaluation prior to any surface disturbing activities. A Memorandum of Agreement with the Idaho State Historic Preservation office, if needed, will be completed prior to construction. Any resources discovered during construction will be evaluated by the BLM/IDL Field Officer or designee prior to any further surface disturbing activities in that area.

Native American Consultation

Consultation with Tribal Governments will continue during construction to address Tribal concerns.

2.7 DESIGN APPROVAL PROCESS

While Plans of Development typically begin with project construction, Windland will communicate and collaborate with the BLM/IDL during the design phase as well. Such collaboration will keep all parties informed of the exact nature of activities and disturbed areas, so that any unnecessary disturbance of critical areas can be avoided.

Windland will prepare drawings and documentation of the project design at critical design phases, and provide these drawings to the BLM/IDL for review. The intention of these reviews is to evaluate the disturbed area of the project against the FEIS and POD, and provide feedback to Windland. The BLM/IDL is not expected to provide an independent review of the project engineering, nor provide formal "approval" of project drawings. The design phases when the drawings will be presented to the BLM/IDL include:

- Initial project layout and road alignment
- Completion of wind turbine micrositing and road alignment
- Drawings issued for bid
- Drawings issued for construction
- Final as-built drawings

The design aspects to be presented to the BLM/IDL for review include:

- Wind turbine locations
- Road alignment
- Stormwater drainage design
- Temporary construction laydown areas
- Temporary concrete batch plant location
- Permanent O&M Building location
- Electrical collection system alignment
- Substation location and arrangement
- Transmission line alignment
- Blasting

For those design aspects described above that impact IDL lands, Windland will issue those drawings to the IDL for review. The type and level of review from IDL is expected to be similar to that of the BLM/IDL (i.e. no independent engineering review or formal approval of the project design will be expected or required).

3.0 CONSTRUCTION

The actions necessary to construct the Cotterel Wind Power Project are described below. Where helpful, photos of similar activities from the construction of other wind energy projects have been added for illustration. Unless otherwise mentioned in the text, all photos are from the installation of a 950 kW Vestas V54 wind turbine in Palmdale, California, in July 2004.

3.1 HEALTH, SAFETY, AND ENVIRONMENTAL PLAN

The Cotterel Wind Power Project HSE Plan will be developed to address HSE risks and requirements during the construction stage of the project. As the project moves into the operational stage, the components of the HSE plan will be modified to adapt to Operational and Maintenance activities.

Components of the Management System that will be addressed in the HSE plan include, but are not limited to, risk management analysis, emergency response, HSE planning and procedures, implementation, monitoring and reporting results, setting performance targets, incident classification, investigation and reporting results, audits and inspections, and HSE management review.

Minimum contractor HSE requirements will be included in the HSE plan. These requirements include personal protective equipment, housekeeping, maintaining a safe workplace, fire prevention, safe work practices, etc. Contractors are expected to comply with these requirements at a minimum. Contractor safety plans will be reviewed for compliance.

Development of the HSE plan is a collaborative effort between Windland and the contractors. Contractor Best Practices will be reviewed and incorporated into the HSE plan as appropriate.

Also included in the HSE plan is a risk register, which identifies potential hazards and the risks associated with them. Contractors are expected to address these risks and develop mitigation plans for incorporation into the register. The risk register is a document that will be used and updated on a continuous basis to identify and mitigate risks as they surface. It is conceivable that mitigation plans as developed may not prove to be sufficient as anticipated. In this case, the HSE plan will be adjusted to provide a suitable solution to project risks.

Observation of HSE performance is a key to avoiding incidents. Project personnel will be expected to regularly observe work practices and provide positive reinforcement and guidance to fellow employees. Work practices that may be considered to place employees or the environment at risk will be identified, evaluated, and modified as necessary to eliminate or substantially reduce the risk.

3.2 PROJECT CONSTRUCTION PLAN

This section contains a general description of the construction steps for the major components of the project. More details on specific construction activities, and their potential impacts to the environment and public safety, are provided later in Section 3.

This plan discusses the general activities and design approaches as currently understood and anticipated. Windland will remain in contact with the BLM/IDL as the project designs are finalized and specifics on construction are available.

In general, the design approach for the Cotterel Mountain project will have two objectives.

The first is the concept of minimizing the overall environmental impact of the project, while maintaining cost effectiveness and safety standards. This will include minimizing the amount of cut and fill required for the roads and foundations, and the use of as much excavated soil and rock as possible on project roads.

The second design objective is the concept of "adaptive management", in which the project design will be done to complement the natural characteristics of the site. Examples of adaptive management include allowing for the current level of public access on the existing road while also limiting public access on the improved roads. Adaptive management will also be employed during construction by allowing for some specifics to be modified to adapt to actual site conditions (subsequent to BLM/IDL approval).

Prior to the start of construction, Windland will review and document the general condition of the site, including the levels of vegetation and areas of disturbance. When construction is completed Windland will conduct re-vegetation and reclamation to return the site to a near pre-construction condition. This would include re-seeding areas exposed during civil construction, weed control measures, and returning land contours and drainage to conditions similar to those that existed prior to construction.

Windland understands and respects that the land on Cotterel Mountain is held in public trust, and as such the public have a right to expect access to the site not to change. Public access will only be limited during construction to those specific areas where the construction activities could cause public safety concerns. These activities include, but may not be limited to, wind turbine erection, foundation excavation, electrical collection system trenching, and substation construction. Once these activities are completed, public access will resume to its current state.

3.2.1 Roads and Turbine Pads

In order for equipment and personnel to reach the wind turbine locations, roads will need to be constructed on the site. A road from Highway 81 to the top of Cotterel Mountain sufficient to allow for truck traffic during the project construction will be built. Additionally, an access road that runs adjacent to each turbine site and the project substation will also be built. The access road will be located to minimize disturbance, avoid sensitive resources (e.g., raptor nests, cultural resource sites, sage-grouse habitat, etc.) and maximize transportation efficiency during construction and maintenance activities. A picture of an access road under construction for the Albany wind energy project in Australia is shown in Figure 3-1 below.

Figure 3-1. Turbine Access Road Under Construction.

The access road will provide vehicular access (construction and maintenance) to the following permanent and temporary areas associated with the project:

Permanent access:

- Each wind turbine
- Meteorological tower
- Substation
- O&M building

Temporary access (during construction):

- Concrete batch plant
- Construction parking and lay-down

Many of the trucks bringing wind turbine components to the site will be extra-long (for blade transport) and heavy-load (for wind turbine nacelles).

Construction zones will be built around each wind turbine site. The area around each site will need to be clear and level enough to allow for the wind turbine components to be delivered, and for a crane to be set-up. Designers will work to minimize the amount of work required at each site, and where possible only a minimal amount of vegetation will be removed to allow for component delivery. It is likely that, at most sites, the location for the crane will require the same amount of earthwork as the roads (described below), although these pads can then be removed and the site restored to a natural state once construction is complete.
To the greatest extent possible, the area of construction and operation of the project (often referred to as the project "footprint") will be consolidated for efficient land use in order to minimize disturbance to the existing ecosystem.

When practical, the routing of existing roads will be improved rather than constructing new roads. However, overall public access from Highway 81 will not be improved beyond current conditions. Also, the cut and fill required for the access road will be balanced to the extent possible, to minimize the amount of materials that would need to be brought onto or removed from the site.

The design of the road will utilize the flow of the natural contours; however, in order to maintain safety during construction and maintenance activities, the following design criteria will also be implemented:

- Existing BLM design standards, such as 9113 Manual (BLM 1985), or the design standards suitable for wind energy development, approved by the BLM, indicated below.
- Maximum access road slope of 10 percent
- Maximum road slope between turbines (turbine string road) between 7 and 10 percent.
- Maximum road width
  - Access road width of 20 feet
  - Turbine string road width of 38 feet (required for crane movement on site), or 20 feet with an extra track about 18 feet off the road for crane movement
- Minimum turn radius (inside radius of road way) of 115 feet (based on transporting three turbine blades at a time) wherever possible, or 76 feet (based on transporting one turbine blade at a time) where necessary.
- Road surface will be that of an all weather gravel road.
- Design speed of 15 MPH maximum on the turbine string road, and 25 MPH on the site access road.

The site access and turbine string roads will generally be constructed in the following sequence:

- Stake centerline of access and turbine string roads (see Section 3.4.1 for details)
- Install temporary stabilization features, such as silt fences, straw bales and other controls at the limits of construction
- Clear and grub area associated with the access and turbine string road (see Section 3.4.4 for details.)
- Separate and stockpile top soil for later use
- Grade roads to slopes/design indicated on construction drawings (see Section 3.4.5 for details)
- Compact sub-grade
- Install aggregate all weather road surface
- Install final stabilization/re-vegetation on disturbed areas associated with the roadway corridor
- Remove temporary stabilization measures once final stabilization measures are established

Once the construction of the roads and turbine pads are complete, reclamation will be performed around the areas disturbed by the civil construction. The materials cut from the mountain during the road construction will be used to return contours to near pre-construction conditions. Any remaining cut materials will be distributed across the mountain in a manner that will not increase dust and erosion, nor change drainage conditions, but will keep the materials on the mountain. To the extent possible, the materials cut from land administered by IDL will be segregated from other materials, and only used within the IDL sections. Any exposed areas that are not covered by road materials will be re-vegetated using a seed mixture specified by the BLM/IDL. Noxious weed control will continue on-site during the re-vegetation process and during the life of the project.

3.2.2 Electrical Collection System

Each wind turbine in the Cotterel Mountain Wind Power Project will be connected to an underground electrical cable to allow the generated energy to be sent to the project substation. These cables will be direct-buried (rather than placed in conduit) using cable specifically designed for this application. The voltage of this system will be 34.5 kV, but could potentially be from 12 kV to 46 kV.

If possible, the cables will be buried directly into the soil and materials found on-site. However, if those native materials are found to provide insufficient thermal conductivity (i.e., allow heat to dissipate from the cables), Windland may need to bring in engineered backfill. This backfill will be a soil of a type sufficient to radiate the heat from the cables. The engineered backfill would only be used in the trenches with the cables, and only to an amount sufficient to radiate the necessary heat from the cables. The remaining depths of the cables will be filled.

To install the electrical collection system, the following construction activities will be performed:

- Survey/Stake Site (see Section 3.4.1)
- Trenching (see Section 3.4.9)
- Buried Cable Placement (see Section 3.6.1)

In almost all areas, the cable will be run along the side of the project roads, in an area already disturbed by the road construction. The cable will not be run in the center of the road to avoid unnecessary stress on the cables due to vehicle traffic, as well as the potential for cable damage during road maintenance. For areas near the substation where several runs of cable will all be in the same area, Windland may use both sides of the road for the cable trenches. Cables will be installed in a manner similar to that described above, and then re-contoured to a state similar to pre-construction and re-vegetated with BLM/IDL-approved seed.

3.2.3 Wind Turbine Foundations

The wind turbine base foundation anchors the wind turbine structure (consisting of the tower, hub, blades, and nacelle) securely to the ground. For most projects, the construction of the wind turbine foundations constitutes the largest volume impact of earth excavation, although

some foundation designs allow for much of the excavated material to be backfilled in and around the foundation itself.

Two foundation designs are typically used for wind turbine installations in the U.S., the specific one for the project being determined by the soil conditions and wind turbine requirements. The first foundation type is a "mat" foundation, and is shown in Figure 3-2. The second foundation type is a "pier" foundation, and is shown in Figure 3-3. Mat foundations are wide and shallow, and pier foundations are narrow and deep. There are variations on these foundations. The exact foundation type is dependent on completion of the geotechnical investigation. Under known conditions most foundations will be pier design.

Figure 3-2. Mat Foundation Installation.

Figure 3-3. Pier Foundation Installation.

At the top of both foundation types is the turbine base. The base consists of a metal ring and series of anchor bolt connections to mate the foundation to the bottom of the wind turbine tower. The turbine base is cast into the concrete reinforced structure that makes up the remainder of the foundation. An electrical earthing mat is typically cast in place when the concrete for the foundation is poured. The casting and the subsequent backfilling of the foundation is typically done prior to the delivery of the wind turbine tower to allow the lowest sections of the wind turbine tower to be placed upon delivery.

To build a wind turbine foundation, the following tasks are required. Any additional tasks or deviations will be approved by the BLM/IDL prior to their commencement.

- Survey/Stake Site (see Section 3.4.1)
- Clear/Grub Site (see Section 3.4.4)
- Perform site grading (see Section 3.4.5)
- Install Foundations
  - Rock Removal and Blasting (if necessary, see Section 3.4.3)
  - Excavation (see Section 3.4.7)
  - Place rebar (see Section 3.5.2)
  - Place turbine base
  - Place forms (see Section 3.5.3)
  - Pour concrete (see Section 3.5.4)
- Install Below Grade Raceway (Conduit, Ductbank, Trench, etc.)
- Install Below Grade Ground Grid/mat
- Install a Sub-layer of Crushed Rock Surfacing
- Back fill with required aggregate

While most of the project site is on land administered by the BLM, some portions are administered by IDL. IDL has indicated that all excavated materials from their lands should be used within the boundaries of their land. If Windland determines that some native materials will need to be removed from IDL land, or excavated materials from BLM land brought onto IDL land, Windland will seek approval for such activities from IDL and the BLM.

Windland will perform an extensive geotechnical investigation prior to construction to determine the soil conditions at each site. While very unlikely, it is possible that when the foundation site is excavated, the soil conditions could be found to be very different from expected and not conducive to wind turbine installation. In that case, the excavated soils will placed back into the hole, and then compacted to a level as close to pre-excavation as possible. The surface of the site will be re-vegetated using BLM/IDL-approved seed.

3.2.4 Wind Turbine Installation

The wind turbines themselves are the primary generation equipment in the project. Their installation requires specialized equipment and crews and careful planning. Once construction has fully begun on-site, components will be delivered directly to their installation locations as they arrive at the project. Lower tower sections will be placed immediately on foundations, with the remaining components placed around the site in

planned laydown arrangements. Crane crews will erect the turbines soon after all components arrive to minimize the amount of time the equipment is on the ground. The only exception may be if components begin to arrive in the spring before the site is available for construction (due to snow on the site, or sage-grouse lekking). In such an instance, some components may be temporarily stored near the O&M facility site until full project site access is available.

Figure 3-4. Wind Turbine and Crane.

The construction activities necessary for the installation of a wind turbine that are not discussed above include:

- Turbine component delivery and storage (see Section 3.7.1)
- Crane movement or assembly (see Section 3.7.2)
- Wind turbine component lifts (see Section 3.7.3)

3.2.5 Meteorological Tower Installation

Three meteorological towers will be installed on site to take accurate weather readings used to track the performance of the wind turbines. These readings will include wind speed and direction, barometric pressure, humidity, and ambient temperature. The towers will be assembled on site. Due to terrain, wind, and icing conditions at the site, Windland has determined that guyed-monopole towers are the most effective design for use at meteorological towers. These towers will use anti-perch points on horizontal surfaces of the tower to prevent the perching and nesting of birds. An example guyed meteorological tower is shown in Figure 3-5.

To build a meteorological tower, the following tasks are generally required. It is expected that these tasks will be performed for the meteorological towers at the Cotterel Mountain site. Once the detailed engineering is performed, it will be determined if additional tasks will also be required. Any additional tasks will be approved by the BLM/IDL prior to their commencement.

- Survey/Stake Site (see Section 3.4.1)
- Clear/Grub Site (see Section 3.4.4)
- Perform Site Grading (see Section 3.4.5)
- Install Foundations
    - Excavation (see Section 3.4.7)
    - Place Rebar (see Section 3.5.2)
    - Place Forms (see Section 3.5.3)
    - Pour Concrete (see Section 3.5.4)
- Install Below Grade Ground Grid (see Section 3.6.2)
- Install Communications and Electrical Lines (see Section 3.6.1)
- Erect Meteorological Tower (see Section 3.7.3)

Figure 3-5. Meteorological Tower.

3.2.6 Substation

The energy generated by the wind turbines will be delivered to the substation via the underground collection system. At the substation, voltage of the energy will be increased from the collection system level of 34.5 kV to the transmission level of 138 kV. Also, capacitor banks and other equipment will be installed at the substation to provide the voltage support necessary to meet the interconnection requirements for the project. A small control building will exist within the substation for electrical metering equipment, and the supervisory control and data acquisition (SCADA) system for the wind turbines.

To build a substation, the following tasks are required. Once the detailed engineering is performed, it will be determined if additional tasks would also be required. Any additional tasks will be approved by the BLM/IDL prior to their commencement.

- Survey/Stake Site (see Section 3.4.1)
- Clear/Grub Site (see Section 3.4.4)
- Perform Site Grading (see Section 3.4.5)
- Install Foundations
  - Excavation (see Section 3.4.7)
  - Place Rebar (see Section 3.5.2)
  - Place Forms (see Section 3.5.3)
  - Pour Concrete (see Section 3.5.4)
- Install Below Grade Raceway (Conduit, Ductbank, Trench, etc.)
- Install Below Grade Ground Grid
- Install Perimeter Fence
- Install a Sub-layer of Crushed Rock Surfacing
- Install Substation Steel Structures and Control Enclosures
- Install Substation Electrical Equipment (Circuit Breakers, Transformers, Disconnect Switches, Potential Transformers, etc.)
- Install Above Grade Ground Stingers
- Install Substation Bus Conductors & Jumpers
- Install Control/Relay & Communication Materials
- Install Secondary Control/Power Cable and Terminations
- Install Final Layer of Crushed Rock Surfacing
- Perform Substation Testing/Commissioning Activities
- Energize Substation

3.2.7 Transmission Line

To interconnect the Cotterel Wind Power Project with the existing electrical transmission grid, a 19.7 mile 138 kV transmission line will be required. Approximately seven miles of this line will be on public lands administered by the BLM. Five and one-half miles will be on IDL land. The line will be routed northeast from the project substation to a point where it will meet the existing Raft River Electric Cooperative transmission line. The project line will then cross over the Raft River line and parallel the ROW of that line north until it reaches the Snake River. The project line will cross the Snake River to the west of Lake Walcott, then proceed northeast to the interconnection point with the Idaho Power transmission line north of Minidoka Dam. The transmission line and towers will include devices to prevent raptor perching, including anti-perching triangles and surge arrestor caps.

The construction steps of the transmission line are listed below.

- Survey/Stake Site (see Section 3.4.1)
- Clear/Grub Site (see Section 3.4.4)
- Perform Site Grading (see Section 3.4.5)
- Install transmission poles
- Wire stringing, tensioning, and clipping
- Terminate wires at substations

Figure 3-6. Transmission Line Under Construction.

3.2.8 O&M Building

The Cotterel Mountain Wind Power Project will require the establishment of an O&M Building. This building will house storage for small parts, offices for the project staff, computers and control equipment for the wind turbines, and shop facilities. This building will be pre-engineered, and assembled and finished on-site. It will be located on IDL land at the north end of the project. The O&M Building will be located where indicated in the FEIS as shown in Figure 2-1 of this plan. A picture of the O&M Building from the Colorado Green project near Lamar, Colorado, is shown in Figure 3-4. The O&M Building will be painted an earth-tone color. The O&M Building will also have bathrooms and a septic system will be installed on IDL land.

The construction of the O&M Building will require the following activities:

- Survey/Stake Site (see Section 3.4.1)
- Clear/Grub Site (see Section 3.4.4)
- Perform Site Grading (see Section 3.4.5)
- Install Foundations
  - Excavation (see Section 3.4.7)
  - Pour Concrete (see Section 3.5.4)
- Install Communications and Electrical Lines (see Section 3.6.1)

Figure 3-7. Typical Wind Energy Facility O&M Building.

3.2.9 Construction Schedule

The exact schedule of construction will depend upon the approval date for the project, weather, delivery schedules for the turbines, steel, cement, and electrical components, and seasonal restrictions during which construction must be delayed for wildlife protection. In general, a typical schedule for the construction of wind energy projects of this scale is shown below.

Activity	Month
Mobilization	1
Access Roads, Laydown Areas Complete	3
Substation Construction	3-6
Transmission Construction	3-6
Foundations	4-8
Wind Turbine Generator Erection	5-11
Commissioning	11-12
Acceptance Testing	12-13

The schedule for construction on Cotterel Mountain will include a demobilization of outdoor work on the mountain for winter, between November and March. Any interior work, such as the commissioning of the wind turbines and finishing of the O&M Building, can occur during this period, as can the construction of the transmission line. The schedule will also account for lower levels of productivity due to construction restrictions during the sage-grouse mating periods of March 15 to May 15.

3.3 GENERAL CONSTRUCTION ACTIVITIES

3.3.1 Good Housekeeping

Good housekeeping is very important for all construction sites, and wind energy projects are no different. Good housekeeping can drastically reduce the incidents of injuries on site, as well as minimize the environmental impact. At the end of each work shift, care will be taken to remove debris from turbine sites and disposed of in a BLM/IDL approved landfill. Materials still needed at the turbine site will be assembled and secured at the site, and those materials no longer needed, will be returned to the construction laydown area.

One designated area will be used for "washing out" concrete trucks. The washout area will include catchment with an impermeable liner. Washout water will be recycled in the batch plant or pumped into tank trucks and removed from the site. The location for disposal will be approved by the BLM/IDL.

3.3.2 Truck Deliveries

Heavy vehicle traffic will be accessing the site during the construction phase of this project. Many of these vehicles will be specialized vehicles for turbine component delivery (such as the blade truck in Figure 3-8, obtained from Vestas). Included in the normal heavy duty truck traffic on site will be cement trucks used for delivering cement for the construction of the turbine bases, dump trucks to move aggregate from base excavations, and water tankers to wet down the site roads for dust control. Trucks will be confined within the site boundary for safety, fire control, and noxious weed control (see Section 3.8.5). Signs on the public roads utilized by these trucks will be erected warning the public of the increased heavy construction traffic on these roads. When possible, delivery times will be coordinated with the use patterns of the roads (especially Interstate 84 and Highway 81) to avoid traffic congestion. All trucks will be washed down at a location approved by the BLM/IDL for noxious weed control prior to entering the site.

3.3.3 Materials Receipt, Handling, and Storage

With the large amount of items and material arriving on-site, a plan must be developed for receipt, handling, and storage. A construction lay-down yard will be developed at the site of the O&M Building along the north access road approximately two miles south of Highway 81, on IDL land, where most construction materials will be offloaded and stored. Wind turbine components will be delivered directly to the site where they will be installed, although deliveries taken before the site is available (either due to weather or road construction) will be off-loaded in the lay-down yard. Likewise, materials needed for the concrete batch plant, substation construction, or electrical collection system will be offloaded near their use sites.

Figure 3-8. Wind Turbine Blade Delivery Truck.

3.3.4 Fencing

Windland will post warning signs along the access roads informing the public of construction activities, and recommending the public stay off the site. Access will be barred from the new site access road by a fence and locked gate with a guard during operating hours. The existing site access road (old road) will remain open.

For those areas where public safety risks could exist and site personnel will not be available to control public access (such as excavated foundation holes and electrical collection system trenches), temporary warning fences will be erected. Similarly, fencing will be installed around any lay-down areas. Other areas deemed hazardous, or where issues with security or theft are of concern, may also be fenced. Windland will coordinate the fencing with the BLM/IDL. The project substation will be permanently fenced for safety.

Temporary fencing for lay-down areas will be chain-link. Temporary fencing around unfinished turbine bases are designed more to warn people of the potential danger than to bar access, and therefore this fencing is typically a high visibility plastic mesh. Excavations will be fenced with chain-link or other livestock fencing to protect livestock. Permanent fencing around the substation will be palisade fencing.

3.4 CIVIL CONSTRUCTION ACTIVITIES

3.4.1 Surveying and Staking

Construction surveying and staking are the first construction activities associated with the project. Field crews will use survey equipment and known reference points to locate points in the field that correspond to critical project design locations. When a critical point is found, it

is marked with a survey stake (a wooden stake with a colored plastic flag, driven into the ground one to two feet). The project site is accessed by a pick-up truck or similar vehicle. Teams of two or more surveyors walk across the site to perform the surveying and staking.

The items to be surveyed and staked include:

- the centerline of the access road
- the centerline of the turbine string road
- wind turbine locations
- meteorological tower locations
- substation boundary
- O&M Building boundary
- disturbance areas
- construction facilities

Once surveying and staking are completed, a joint inspection will be completed by the BLM and IDL Authorized Officers, construction manager, and design engineer. During the inspection, if areas of concern regarding sensitive species, cultural sites, springs, wetland, or other issues arise, the Authorized Officers, construction manager, and design engineer will correct the deficiencies or engage in the process of adaptive management to determine a reasonable outcome in accordance with the ROW grant.

Potential environmental impacts during the surveying and staking process include:

- Wildlife: Sage-Grouse (see Section 3.8.2)
- Plant Species: Pediocactus (see Section 3.8.4)
- Noxious Weed Control (see Section 3.8.5)

3.4.2 Geotech Sampling

The primary objective of the geotechnical investigation is to characterize the strength characteristics of the bedrock and determine dynamic properties for the turbine foundation design. The investigation will consist of coring specific locations along the turbine alignment. Coring will be completed using moderate-sized geotechnical drilling equipment mounted to either a truck or tracked vehicle. The coring process will obtain samples of rock core that will be logged. Samples of the cores will be sent to a geotechnical for laboratory strength testing. The coring process leaves holes at the test site approximately three inches in diameter and up to 40 feet deep. Upon completion, each hole will be backfilled in accordance with Federal and state requirements. Test pits dug with a backhoe or similar equipment may also be utilized to evaluate whether the bedrock can be excavated.

Additional geotechnical investigation includes several seismic refraction survey lines. The seismic refraction lines will be used to determine dynamic soil properties of the underlying bedrock and will also be used to confirm bedrock strength. The seismic refraction lines will be completed using an extremely low energy sources, (a sledgehammer and plate). The seismic analysis will also include multichannel surface-wave analysis, which utilizes background vibrations such as vehicles to generate seismic noise.

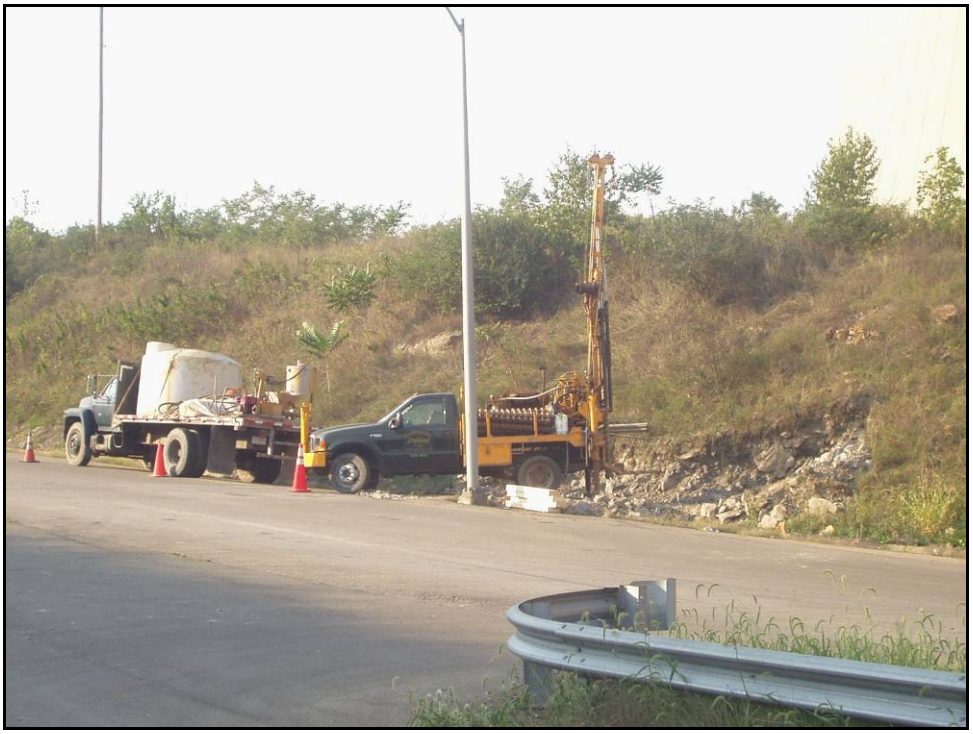

Figure 3-9. Typical Coring Truck and Support Vehicle.

Figure 3-10. Typical Coring Tracked Vehicle.

Potential environmental possible during geotech sampling include:

- Wildlife: Sage-Grouse (see Section 3.8.2)
- Plant Species: Pediocactus (see Section 3.8.4)
- Noxious Weed Control (see Section 3.8.5)
- Noise (see Section 3.8.7)
- Water Resources (see Section 3.8.8)

3.4.3 Rock Removal/Blasting

Bedrock at the site is competent basalt that will require blasting to remove. Blasting and excavation will be completed in accordance with applicable regulations and sound engineering practice, using methods and techniques that will minimize overbreak beyond the limits indicated on the drawings and which will preserve the rock beyond these limits in the soundest possible condition. Controlled blasting techniques including presplitting and line drilling will be utilized. Prior to commencement of blasting operations, a blasting plan will be prepared. The blasting plan will include specific detailed information on all procedures, materials, and equipment to be used. The blasting plan will describe procedures and precautions to be taken with regard to the public, environmental and natural resources, and protection of existing structures. The blasting plan will indicate specific drilling, blasting, mucking, and hauling operations. All blasting will be performed in accordance with the approved blasting plan. Pre-blast surveys and blast monitoring will be required for blasting within 500 feet of any existing structures. Additional monitoring will also be required for blasting near identified springs (see Section 3.8.8).

Potential environmental impacts during rock removal and blasting include:

- Public Safety (see Section 3.8.1)
- Wildlife: Sage-Grouse (see Section 3.8.2)
- Livestock (see Section 3.8.3)
- Plant Species: Pediocactus (see Section 3.8.4)
- Noxious Weed Control (see Section 3.8.5)
- Dust (see Section 3.8.6)
- Noise (see Section 3.8.7)
- Water Resources (see Section 3.8.8)
- Cultural Resources (see Section 3.8.11)

3.4.4 Clearing & Grubbing

Clearing work will include clearing and removing all trees within the areas indicated on the design drawings; cutting and removal of all brush, shrubs, debris, and vegetation to approximately flush with the ground surface; and disposal of all cuttings and debris. Disposal of cuttings and debris will be in an approved facility designed to handle such waste or at the direction of the BLM/IDL Authorized Officer.

Grubbing work will include the complete removal and disposal of all stumps and roots larger than approximately two inches in diameter, including matted roots, regardless of size.

Grubbing will extend to a minimum depth of approximately four inches below the natural surrounding ground surface.

All excavations made by clearing and grubbing activities will be backfilled with compacted earth/aggregate available on site.

Potential environmental impacts during the clearing and grubbing process include:

- Wildlife: Sage-Grouse (see Section 3.8.2)
- Wildlife: Golden Eagles (see Section 3.8.2)
- Wildlife: Migratory Birds (see Section 3.8.2)
- Wildlife: Mule Deer (see Section 3.8.2)
- Wildlife: Mountain Lions (see Section 3.8.2)
- Plant Species: Pediocactus (see Section 3.8.4)
- Noxious Weed Control (see Section 3.8.5)
- Dust (see Section 3.8.6)
- Noise (see Section 3.8.7)
- Cultural Resources (see Section 3.8.11)

3.4.5 Site Grading

There are three phases associated with the grading activities for the project. The first (road grading) is the construction of the roadways associated with the project. The roads will be constructed based on the lines and grades indicated on the detail design drawings. At the same time the roads are being constructed, or very shortly after they are completed, the second phase (rough grading) associated with the turbine sites, substation, and O&M building will begin. Once the turbine sites, substation, and O&M building are completed, the third phase (final grading) activities will be completed with these facilities.

All ground surface areas disturbed by construction activities will be graded. The grading will be finished to the contours and elevations indicated on the drawings or match contours and elevations of the original undisturbed ground surface. The final grading will provide a smooth, uniform surface and minimize the impact to existing water runoff patterns.

The overall goal of the detail design associated with grading activities is to achieve a cut and fill balance. Such a balance ensures that a minimum of material is required to be transported on or off the site.

Potential environmental impacts during the site grading process include:

- Wildlife: Sage-Grouse (see Section 3.8.2)
- Wildlife: Golden Eagles (see Section 3.8.2)
- Wildlife: Migratory Birds (see Section 3.8.2)
- Wildlife: Mule Deer (see Section 3.8.2)
- Wildlife: Mountain Lions (see Section 3.8.2)
- Livestock (see Section 3.8.3)
- Plant Species: Pediocactus (see Section 3.8.4)

- Noxious Weed Control (see Section 3.8.5)
- Dust (see Section 3.8.6)
- Noise (see Section 3.8.7)
- Water Resources (see Section 3.8.8)
- Cultural Resources (see Section 3.8.11)

3.4.6 Road Base Construction

The road base (aggregate) will be placed on graded areas in 6-inch to 12-inch (maximum) deep compacted layers, to the finished grade as indicated on the engineering drawings. The depth of a compacted layer will be based on the compaction standard required in the engineering drawings approved by the BLM. Geotextile may be required for separation between the road subgrade and the aggregate, except where otherwise specifically noted.

Aggregate materials will be made from crushing the excavated rock from the foundation holes, and therefore will be materials from the project site, to the extent possible. Any additional aggregate materials will be from private sources located off-site. As the access and initial project roads will need to be built before any foundations are excavated, initial quantities of aggregate will need to be imported from a nearby source. The exact source of the aggregate will be determined once a civil construction contractor is selected.

Potential environmental impacts during the road base construction include:

- Public Safety (see Section 3.8.1)
- Livestock (see Section 3.8.3)
- Noxious Weed Control (see Section 3.8.5)
- Dust (see Section 3.8.6)
- Noise (see Section 3.8.7)
- Water Resources (see Section 3.8.8)
- Spill Prevention Plan (see Section 3.8.9)
- Cultural Resources (see Section 3.8.11)

3.4.7 Excavation

Excavation involves the removal of earth and rock to allow for the construction of roads and foundations. Excavation for structures will be completed to the designated lines and elevations indicated on the detail design drawings. Machine excavation will be controlled to prevent undercutting the subgrade elevations indicated on the drawings.

Excavated materials that meet the specified requirements may be used for the fills, embankments, and backfills. Vertical faces of excavations will not be undercut to provide for extended footings.

Material excavated below the bottom of concrete structures to be supported on the subgrade will be replaced with concrete placed monolithically with the concrete above. Rock fill or lean concrete may be used, if acceptable to the design engineer and the BLM/IDL Authorized Officer.

Excavated materials will be crushed for road aggregate or placed back into the center of the foundation hole. Most rock material will be crushed and used as road aggregate. Remaining excess excavated materials, if any, will be used on the site for road maintenance, and will not be hauled off-site unless absolutely required and approved by the BLM/IDL Authorized Officer.

Potential environmental impacts during excavation include:

- Public Safety (see Section 3.8.1)
- Wildlife: Sage-Grouse (see Section 3.8.2)
- Livestock (see Section 3.8.3)
- Plant Species: Pediocactus (see Section 3.8.4)
- Noxious Weed Control (see Section 3.8.5)
- Dust (see Section 3.8.6)
- Noise (see Section 3.8.7)
- Water Resources (see Section 3.8.8)
- Spill Prevention Plan (see Section 3.8.9)
- Cultural Resources (see Section 3.8.11)

3.4.8 Compaction

During construction of roads and foundation structures, it is critical that the earth under them is solid. To achieve this, the earth is compacted. Compaction associated with the Cotterel Mountain Wind Power Project will meet the following standards:

- For roads, the requirements outlined in the BLM Road Standards (Manual Section 9113). The manual indicates that the top 12 inches of subgrades of all roads that are to be surfaced will be compacted to 95 percent of the maximum density as determined by AASHTO T-99.
- Rock fill will be compacted in eight-inch uncompacted thickness to 70 percent relative density as determined by ASTM D4253 and D4254. Compaction will be performed with vibrating mechanical compactors.

Potential environmental impacts during compaction include:

- Wildlife: Sage-Grouse (see Section 3.8.2)
- Dust (see Section 3.8.6)
- Noise (see Section 3.8.7)
- Water Resources (see Section 3.8.8)

3.4.9 Trenching

Open trenching is necessary for the placement of electrical collection system cables and fiber optic lines. The extent of the open trench at any given time will be minimized to only those distances necessary to conduct work. Trenches that are not backfilled by the end of the day will be covered or fenced. Covers will be secured in place and will be strong enough to prevent livestock or wildlife from falling through and into the trench and or hole.

Potential environmental impacts during trenching include:

- Public Safety (see Section 3.8.1)
- Wildlife: Sage-Grouse (see Section 3.8.2)
- Wildlife: Golden Eagles (see Section 3.8.2)
- Wildlife: Migratory Birds (see Section 3.8.2)
- Wildlife: Mule Deer (see Section 3.8.2)
- Wildlife: Mountain Lions (see Section 3.8.2)
- Livestock (see Section 3.8.3)
- Noxious Weed Control (see Section 3.8.5)
- Dust (see Section 3.8.6)
- Noise (see Section 3.8.7)
- Water Resources (see Section 3.8.8)
- Cultural Resources (see Section 3.8.11)

3.4.10 Stormwater Pollution Prevention

A Storm Water Pollution Prevention Plan (SWPPP), which includes erosion control measures, will be generated and implemented on site for the project. The SWPPP will be based on the Environmental Protection Agency (EPA) document entitled "Storm Water Management for Construction Activities-Developing Pollution Prevention Plans and Best Management Practices". The SWPPP will be developed with the civil design of the project, and per the design approval process discussed in Section 2.7, will be reviewed by the BLM/IDL Authorized Officer.

3.4.11 Erosion Control

The erosion control features will be clearly stated within the SWPPP.

3.5 STRUCTURAL CONSTRUCTION ACTIVITIES

3.5.1 Concrete Supply

A batch plant will be set up on-site at the location shown on the attached location maps to provide for the significant amounts of concrete necessary for base foundations of the wind turbines and substation equipment. Attempting to bring onto the site trucks with pre-mixed concrete is not feasible with the distances to the nearest concrete batch plants and especially the time needed to negotiate the mountain. Attempting such deliveries also would pose a hazard to public safety and a greater impact on the environment.

A batch plant capable of producing approximately 50 cubic yards of concrete per hour will be needed for this project. To operate such a plant, a total of 30 tons of sand, 45 tons of aggregate, 15 tons of cement, and 3,000 gallons of water will be needed per hour while mixing concrete at peak production. The gravel and cement will be trucked to the batch plant and temporarily stored next to the batch plant. The gravel and cement will be from private sources located off-site. The water will be stored in a temporary aboveground storage tank. The gravel and cement will be trucked to the site on as close to an on time use schedule as possible to minimize storage.

Potential environmental impacts during the batch plant operational life include:

- Public Safety (see Section 3.8.1)
- Dust (see Section 3.8.6)
- Noise (see Section 3.8.7)
- Water Resources (see Section 3.8.8)
- Spill Prevention Plan (see Section 3.8.9)

3.5.2 Steel Placement

The construction of the numerous turbine foundations will require a considerable amount of steel reinforcement. A lay down area adjacent to the O&M area on State of Idaho land at the north end of the project will be needed to store this rebar until it is needed in the construction process. A fabrication area within the laydown area will also be needed to prefabricate sections of rebar before they are transported to the turbine base excavation. The lay down area is shown on the attached location map.

Typically rebar placement follows the following sequence:

- Fabricate at shop and bend all material
- Ship to site all project materials
- Shake out steel onsite in fabrication/lay down area
- Begin assembly of large mats to reduce in place assembly
- Place prefabricated sections
- Tie-in miscellaneous pieces
- Complete pre-pour inspection

Potential environmental impacts during steel placement include:

- Dust (see Section 3.8.6)
- Noise (see Section 3.8.7)

3.5.3 Formwork

Depending on the type of turbine foundation selected (Section 3.2.3), formwork may be necessary. Formwork is timber or steel shuttering used to form a shape into which rebar is placed and then concrete is poured. The formwork shuttering is then removed when the concrete has cured. The shuttering may be reused but in the case of timber shuttering it may be discarded. Proper disposal methods will be used to discard shuttering no longer fit for reuse.

There are no expected environmental impacts with the placement of formwork, as this will occur after excavation but before steel and concrete placement.

3.5.4 Concrete Placement

Concrete placement will involve two different approaches based on the discussion in Section 3.2.3. The foundation sequence will involve the following steps:

- Excavate foundation area
- Level bottom of excavation, pour mud mat (if required)
- Set forms for base slab (if required)
- Set and brace side wall forms
- Install reinforcing steel
- Install anchor bolts
- Check forms and reinforcing steel for correctness
- Placement of concrete
- Finish top of concrete
- Placement of soil or gravel over below-grade portions of foundation, as appropriate

Potential environmental impacts during concrete placement activities include:

- Public Safety (see Section 3.8.1)
- Dust (see Section 3.8.6)
- Noise (see Section 3.8.7)
- Water Resources (see Section 3.8.8)
- Spill Prevention Plan (see Section 3.8.9)

3.6 ELECTRICAL CONSTRUCTION ACTIVITIES

3.6.1 Buried Cable Placement

There are two methods for the placement of the electrical collection system cable. The first is open trench placement, where a trench is dug to the required depth of cable placement, the cable is placed in the trench, and the trench is then refilled. An example of an open trench is shown in Figure 3-11. The second placement method is direct placement using a trenching machine. These machines cut an opening just large enough for the cable, place the cable, and refill the hole in a combined single pass (see Figure 3-11). While very efficient, these machines are hampered in areas where the soil conditions are very rocky. If the geotechnical investigation shows that the soils present on-site will not conduct heat away from a buried cable properly, it may be necessary to bring to the site an "engineered backfill" material to be placed around the cable for heat dissipation. If such backfill is necessary, the open trench approach will be required. Until the geotechnical investigation is completed, it is not known which method will used at Cotterel Mountain. As discussed in Section 3.4.7, excess materials excavated from trenches will be used for road fill or aggregate.

The medium-voltage electrical collection system cable will be placed a minimum of 48 inches below grade. The fiber optic communications cable will be placed a minimum of 18 inches below grade. The final depths will be determined by the geotechnical conditions of the area, and the manner in which the cable is installed. Direct buried cable will have a warning tape placed over the top at a depth of 12 inches, which will act as a visual reminder of the cable's presence for future site work.

Figure 3-11. Open Trench Example.

Figure 3-12. Trenching Machine Example.

Potential environmental impacts during buried cable placement include:

- Public Safety (see Section 3.8.1)
- Plant Species: Pediocactus (see Section 3.8.4)
- Noxious Weed Control (see Section 3.8.5)
- Dust (see Section 3.8.6)
- Noise (see Section 3.8.7)
- Cultural Resources (see Section 3.8.11)

3.6.2 Grounding

Every wind turbine foundation will have a grounding mat cast in place when the base is constructed. This consists of a copper cable mat that discharges electric energy into the earth when the wind turbine builds up an electrical charge by being struck by lightening or equipment malfunction. The substation will also have a grounding grid laid below grade, in

trenches around the substation site, to protect equipment and personnel in the case of electrical malfunction or lightning strike.

Transmission poles also require grounding. The grounding crew will follow behind the pole assembly and erection crew installing the grounds. This crew will install the proper number of ground rods and measure the ground resistance. If the proper ground resistance is not initially achieved, they will install additional ground rods until the acceptable ground resistance is obtained.

Potential environmental impacts during grounding activities include:

- Public Safety (see Section 3.8.1)
- Plant Species: Pediocactus (see Section 3.8.4)
- Noxious Weed Control (see Section 3.8.5)
- Dust (see Section 3.8.6)
- Noise (see Section 3.8.7)

3.6.3 Buswork and Electrical Line Connections

The majority of the electrical work performed within the BLM/IDL land will be underground. Some overhead electrical line and buswork (rigid overhead meter conductors) connections will be made at the project substation. The electrical collection system will come into the substation underground, then transition overhead into the 34.5kV buswork. This buswork connects the turbines connected on different feeder lines (each line connected to 10 to 12 wind turbines) to a common bus. Any necessary voltage regulation devices will also connect to this buswork, which then connects to the low-voltage side of the substation transformer. On the high-voltage side of the transformer, an overhead connection will be made to the project transmission tie-line using a riser structure.

This buswork will be constructed using small overhead cranes, scissor-lifts, and other similar devices. These components will be bolted together on-site, and placed on small foundations for support. All of this work will be performed within the fence of the project substation. Figure 3-13 shows an example of buswork construction being performed.

Potential environmental impacts during the buswork and electrical line connections include:

- Dust (see Section 3.8.6)
- Noise (see Section 3.8.7)
- Spill Prevention Plan (see Section 3.8.9)

Figure 3-13. Substation Buswork Construction.

3.6.4 Communications Systems Installation

Communications between the wind turbines and the substation will be achieved by using underground fiber optic cables. These cables will be buried above the electrical collection system cables utilizing the same trenches in order to minimize the impact to the environment. Communications to the substation will be achieved by a fiber optic line to the O&M Building.

Potential environmental impacts during communication systems installation include:

- Public Safety (see Section 3.8.1)
- Plant Species: Pediocactus (see Section 3.8.4)
- Noxious Weed Control (see Section 3.8.5)
- Dust (see Section 3.8.6)
- Noise (see Section 3.8.7)

3.6.5 Aviation Lighting on Wind Turbines

Federal Aviation Administration (FAA) regulations require aircraft warning markings on all structures taller than 200 feet. The wind turbine designs being considered for this project would all be taller than 200 feet, so marking will be required. Once the project layout is finalized, a project lighting plan will be developed using the guidance from *FAA Technical Note: Developing Obstruction Lighting Standards for Wind Turbine Farms*, published by FAA in November 2005. Aviation warning for a wind energy project include medium intensity red strobe warning lights, placed on the nacelles of the turbines on each end of a turbine "string" plus every third or fourth turbine. Once the exact marking plan is determined, it will be submitted to the FAA for review. Windland has been working with FAA from the beginning of the project on lighting.

Figure 3-14. Typical Aviation Warning Light.

There are no environmental impacts expected for the installation of the lights themselves. The lights will be installed on top of the nacelles, thus partially shielding their light from sight on the ground while maintaining full visibility to aircraft. The operation of the wind turbine with the lights installed is considered in Section 4-2 (note the light shown above is mounted on the side of the nacelle, in a configuration different from that to be used on Cotterel Mountain).

3.7 WIND TURBINE/METEOROLOGICAL TOWER ERECTION

3.7.1 Turbine Component Delivery and Storage

As wind turbine components arrive at the Cotterel Mountain site, they will be routed to the turbine site where they are to be installed. When trucks arrive at each site, a small crane mounted on rubber tires (rather than tracks) will remove the cargo. Each site will have a plan for the arrangement of major components before erection. These major components include the tower sections, nacelle, rotor hub, and blades (see Figure 3-15 for an example). If the wind turbine foundation has had sufficient time to cure before the lowest tower section arrives, that section will be off-loaded directly onto the foundation.

Turbine deliveries may begin before the site opens in the spring, before the site roads are ready for truck traffic, or outside lekking periods when traffic on the site must be minimized. In these instances, some major components may be offloaded and temporarily stored at the lay-down area near the O&M Building (see Section 3.2.8). These components will then be moved to their turbine site as soon as feasible.

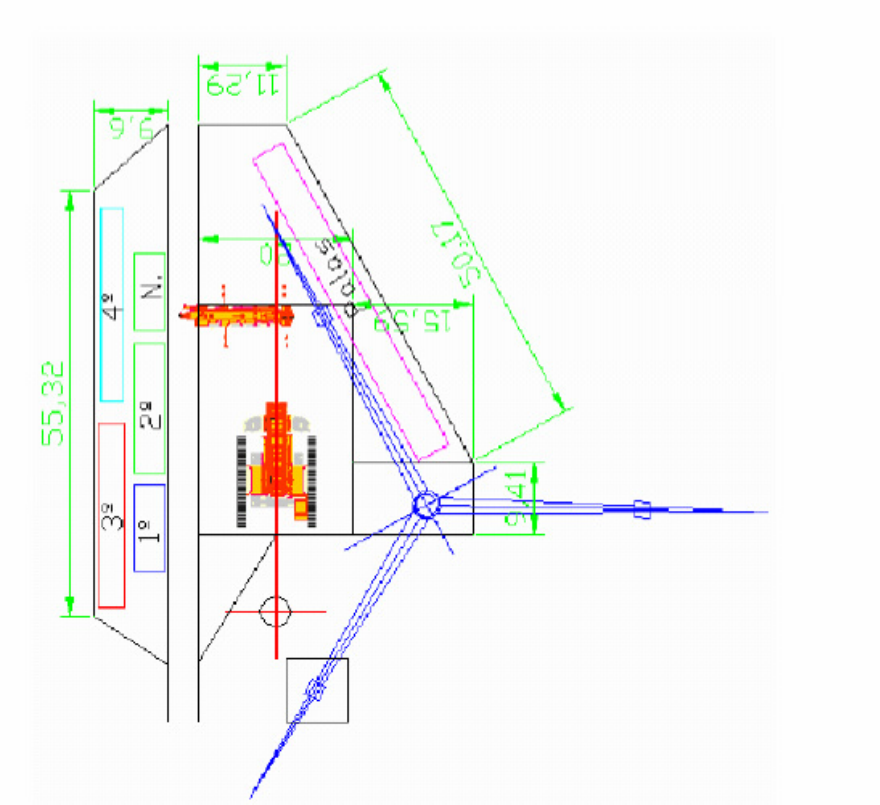

Figure 3-15. Example Schematic of Turbine Assembly Area Plan.

While most of the major components will arrive in completed form, the rotor (consisting of the hub and blades) will need to be assembled. The rotor will be placed with the nose up, and a small crane will be used to lift blades so they can be attached to the rotor. Once these blades are attached, and any hydraulic or electrical connections are made between the hub and blades, the completed rotor package will be ready to be lifted. A picture of a rotor being assembled is shown in Figure 3-16.

Potential environmental impacts during turbine component delivery and storage include:

- Public Safety (see Section 3.8.1)
- Dust (see Section 3.8.6)
- Noise (see Section 3.8.7)

Figure 3-16. Rotor Assembly.

3.7.2 Crane Movement or Assembly

When a large crane first arrives onto the project site, it will be taken to the location for its first turbine installation. The crane will be assembled on that site, and then used to install the wind turbine. Once the turbine at that site is erected, the crane will be "walked" to the next turbine site using the crane's tracked base (see Figure 3-17). The requirements for walking the cranes will set many of the design parameters for the turbine string road, including road width and slope. At locations where the road cannot be built within the tolerances for walking the crane, the crane will be disassembled, moved to the next site, and reassembled.

Potential environmental impacts during crane movement or assembly include:

- Public Safety (see Section 3.8.1)
- Wildlife: Sage-Grouse (see Section 3.8.2)
- Livestock (see Section 3.8.3)
- Plant Species: Pediocactus (see Section 3.8.4)
- Noxious Weed Control (see Section 3.8.5)
- Dust (see Section 3.8.6)
- Noise (see Section 3.8.7)
- Spill Prevention Plan (see Section 3.8.9)

Figure 3-17. Tracked Crane on Crane Pad.

3.7.3 Wind Turbine Component Lifts

Wind turbines are installed in large, pre-assembled components that are interconnected in the field. The tower, which usually consists of three or four sections, is installed first. The sections are lifted one at a time, and bolted together in place as shown in Figure 3-18. Once the last tower section is in place, the nacelle is secured to the top of the tower as shown in Figure 3-19. Finally, the rotor (hub and blades) are lifted into place and secured onto the nacelle. The rotor can be lifted into position as a complete unit, in some instances the hub will first be fitted onto the nacelle, and then the blades are lifted into position and fixed to the hub. The rotor lift requires the use of a small "helper" crane, as shown in Figure 3-20.

Once the crane and all wind turbine components have arrived at a site, the assembly of the major components takes one to two days. The lifting of large turbine components can only be done during periods of high visibility and low winds. Weather delays can occur at some sites. Two or more large cranes may be simultaneously installing turbines.

The types of potential impacts of wind turbine component lifts include:

- Public Safety (see Section 3.8.1)
- Noise (see Section 3.8.7)

Figure 3-18. Mid-Section Tower Assembly.

Figure 3-19. Nacelle Placement.

Figure 3-20. Complete Rotor Pick-Up.

3.8 POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES DURING CONSTRUCTION

The identified potential environmental impacts of the construction of the Cotterel Mountain Wind Power Project are discussed below. Construction staff site orientation will include education on these issues and the project mitigation and monitoring practices. The construction manager will establish a method for staff to formally report any issues associated with the environmental impacts, to keep management informed, and allow for rapid response. It is the intention of Windland that the mitigation measures discussed below be effective and keeps any impacts to a minimum level. If mitigation measures are found to be ineffective, or unanticipated environmental aspects are found on the site, the mitigation and monitoring practices will be adapted to address these conditions. Any adaptations will be made with the approval of the BLM/IDL Authorized Officer.

3.8.1 Public Safety

Given that the site is publicly-owned, the public has a right to access the site and use it for recreation. This right will be balanced with the protection of public safety, a key aspect of the project HSE plan. To accomplish this, Windland will perform public education, site access control, fencing, and limited supervision activities.

Public Education: A project web site will be established to describe the status of the project and disclose the upcoming activities. A kiosk will also be established that will also explain current activities and provide recommendations regarding safe practices on the project site. Additional outreach will be performed as necessary.

Site Access Control: The project cannot limit public access to the site to a level lower than it was prior to the start of construction, except in those areas where public safety could be jeopardized (or where theft-control measures are appropriate). As the road onto the north end of Cotterel Mountain from Highway 81 will be heavily used by construction vehicles, Windland will close this road to the public during construction. Keeping the public off this road while the construction vehicles and equipment are using it will enhance the safety both for the public and for the project construction personnel. Other existing roads onto the mountain will not be altered or closed. The north road will not be closed to livestock grazing permit holders, and Windland will work with the livestock grazing permit holders to coordinate use of the road and construction traffic. Also, signs will be added at other commonly-used access roads to the mountain indicating the north road is closed, and asking the public not to use the project roads during the construction period.

Windland will improve the lower portion of the north access road for construction traffic. At a point about halfway from Highway 81 to the top of Cotterel Mountain, the construction road will diverge from the existing road. At this divergence point, the new road will be gated and locked when construction vehicles are not using the road. When construction is not occurring (such as during weekends and holidays), the lower portion of the access road will be opened, so the public will have roughly the same level of access to the top of Cotterel Mountain as they do now.

As site access control is one of the primary means to provide for public safety, it will be closely monitored. Windland will work with the BLM/IDL to make any necessary changes during the construction period to improve public safety.

Fencing: For those areas where public safety could be endangered, Windland will install temporary fencing. The areas where temporary fencing will be used include open trenches and excavations where a fall hazard exists. Temporary fencing will also be placed around the construction lay-down area to limit the potential for theft and public injury. Permanent fencing will be placed around the substation area, per the legal and safety requirements of the electric utility industry. The intention is to install chain-link fencing around the lay-down areas, and around danger areas if livestock are present on the site. If no livestock are present, plastic warning fencing may be used around dangerous areas to minimize environmental impact.

Limited Supervision: During short-duration construction activities such as wind turbine assembly, Windland will have crews on-site performing the activity and monitoring overall safety. Construction crew members and safety monitors will be trained to ask members of the public to maintain a safe distance from the work zone. Neither the crew members nor the safety officers have the authority or responsibility of keeping all members of the public away from the construction zone, especially if members of the public choose to ignore posting signs or requests for them to keep some distance from the construction zone.

3.8.2 Wildlife

Sage-Grouse

Impacts: The success of the sage-grouse is directly dependent on the health of the sagebrush shrub-steppe community. Construction activity including land grading and clearing is the primary disturbance to sage-grouse.

Mitigation: Clearing of sagebrush communities will be minimized at the project site. In addition, methods of avoiding or minimizing fragmentation of the community will be taken into account prior to clearing.

Six leks (spring courtship grounds) have been identified in the project area. Development will avoid the leks and minimize clearing, grubbing, or otherwise disturbing natural vegetation in the vicinity, especially the sagebrush shrub community. There will be no construction activities within one-half mile of known leks during the spring mating season, defined to be between one-half hour before sunrise and 11:00 a.m. (construction will be allowed after sage-grouse are no longer observed at the lek) between March 15 and May 15. Construction activity is only allowed during daylight hours. Construction activities include the operation of large equipment such as earthmovers, cranes, and semi trucks (traffic from pickups and cars are acceptable). Off-limit areas during the mating season will be appropriately marked so that workers in the area are aware of these sensitive areas. Notification will also be placed in areas frequented by on-site personnel (such as break rooms and restrooms) to advertise the importance of avoiding these areas.

Monitoring: Signage for restricted activity areas will be checked at minimum once each week to insure presence and proper placement. Damaged or missing signage will be replaced as soon as possible. Site managers will observe restricted areas and be responsible for taking appropriate actions if entry to these areas is violated. Persons responsible for environmental compliance will be cognizant of site clearing activities and insure that impacts to the sagebrush community are minimized to the extent possible.

Construction staff will also be asked to report any sightings of sage-grouse on the project site, especially near the leks during the spring mating season. Sage-grouse found in areas without identified leks will be reported to the BLM/IDL for further inspection.

Golden Eagles

Impacts: Golden Eagles are protected under the Bald Eagle Protection Act. Three golden eagle nests were observed within or near the boundary of the project site, and were active during the avian monitoring performed in 2003. As with other birds, the loss of vegetation within the project site could lead to a loss of habitat for the source of food for the eagles.

Mitigation: To avoid direct impacts on the golden eagles, the project has established exclusion areas one-quarter mile centered around the golden eagle nests. No wind turbines will be installed within these areas.

Monitoring: The project site will be visually monitored on a weekly basis, at minimum. Any golden eagle carcasses discovered will be brought to the attention of the BLM/IDL Authorized Officer and to the US Fish and Wildlife Service.

Migratory Birds

Impacts: The Migratory Bird Treaty Act provides protection to many birds found in or migrating through the project area. On this basis impacts to migratory species could result from removal of vegetation (clearing, grubbing, etc.) during site preparation or lesser impacts such as unnecessary trampling of vegetation.

Mitigation: The removal of natural vegetation (grassland, shrub, and forest communities) will be minimized to the extent possible during construction. In addition the movement of personnel and equipment on site will be limited to construction areas to avoid unnecessary trampling of area vegetation.

Monitoring: No particular monitoring for impacts to migratory birds will be performed during construction.

Mule Deer

Impacts: Mule deer are common in the project area and are expected to avoid the site during construction due to noise and related activities. The project will result in the unavoidable permanent loss of a small amount of mule deer habitat. Operation of the facility is expected to have no effect on mule deer once the deer have adjusted to the presence of the wind turbines.

Mitigation: The permanent loss of habitat will be avoided to the extent possible. Indirect effects that could cause degradation of remaining habitat will be minimized by controlling activities that would result in the spread of noxious weeds, avoiding impacts to areas not associated with the project, and re-vegetating areas with native vegetation where feasible.

Monitoring: The project site will be visually monitored on a weekly basis, at a minimum, to insure that construction sites, laydown areas, roadways, and associated activities potentially impacting habitat are limited to areas agreed to prior to construction. Irregularities and/or violations will be reported immediately to project management and corrective actions taken.

Mountain Lions

Impacts: Mountain lions have been observed on Cotterel Mountain. These animals, however, are reclusive and during construction are expected to avoid the project site. Operation of the facility is not expected to directly affect the animals as they are expected to adjust to the presence of the wind turbines and use the area much as they do presently. Mountain lions could be indirectly affected if food resources, such as the mule deer population, were significantly reduced but this is not anticipated.

Mitigation: No specific mitigation is provided. Personnel on site are expected to be advised of the potential for occurrence of mountain lions in the area.

Monitoring: No specific monitoring program is anticipated. Incidents of mountain lions being impacted directly by construction, either by being scared away from the site, or by being injured or killed by construction vehicles, will be reported to the BLM/IDL for further action. Personnel on-site will be notified via signage of the potential for occurrence of Mountain lions in the area.

Big Horn Sheep

Big horn sheep are not currently known to occur on Cotterel Mountain. Therefore no impacts are anticipated and no mitigation is provided.

3.8.3 Livestock

Impacts: The project is expected to result in the permanent loss of about 203 acres of rangeland from turbines, roads, and related structures, plus the temporary loss of an additional 165 acres due to other construction activities. In addition to these direct effects, indirect impacts could result in degraded rangeland conditions caused by the spread of invasive and noxious weeds, which in turn is caused by the ground disturbances associated with the construction and operation of the project. The livestock are expected to adjust to the increased traffic during construction, as well as the presence of the wind turbines and associated structures.

Mitigation: Initial mitigation will be in the form of re-vegetation efforts applied to areas disturbed by construction activities (165 acres). Re-establishment of desirable native vegetation will take several years. Throughout the life of the project, it will be important to control invasive and noxious weeds. Also, any open trenches or pits that are left unattended will be fenced for safety, and existing cattle guards will be left in place. If livestock are expected to be on-site during these times, the safety fencing will be chain-link rather than plastic. There are livestock watering tanks and pipes on the project site. If Windland damages any portions of the livestock watering system, while livestock are on the project site, the system will be repaired as soon as possible, or supplemented water will be provided. If livestock are not present, the system will be repaired before livestock are brought back to the site.

Monitoring: The project site will be visually monitored on a weekly basis, at minimum, to insure that construction sites, laydown areas, roadways, and associated activities potentially impacting grazing lands are limited to areas agreed upon prior to construction. Irregularities and/or violations will be reported immediately to project management and corrective actions taken.

Construction staff will be asked to report any incidents of interaction with livestock, or livestock found close to the construction areas. If livestock are found to be attracted to the construction traffic or activities that increase their risk of injury, further mitigation measures will be discussed with ranchers, which may include the project relocating the livestock to off-site grazing areas for the remainder of construction. Such relocation will be with the agreement of and no cost to the rancher.

3.8.4 Protected Plant Species

No threatened or endangered species listed by the federal Endangered Species Act are found on the project. Simpson's hedgehog cactus (*Pediocactus simpsonii*) occurs at the site and is listed by the BLM as a special status species.

Pediocactus simpsonii

Impacts: Nearly every portion of Cotterel Mountain supports populations of *Pediocactus simpsonii* (Simpson's hedgehog cactus). The primary impact to the cactus population will be from surface disturbance. Clearing, grading, and excavation of any type will remove plants in those specific locations. In addition, trampling plants by equipment or individuals, accidental spills, or burning could affect the species as well as its habitat. The extent of direct impact to the species is limited to the construction area of the project site. The same impacts listed above can result in indirect impacts to the cactus.

Mitigation: Project construction personnel will be encouraged to avoid damaging or removing Simpon's hedgehog cactus wherever possible. Where impacts are unavoidable, it may be possible to move the cactus to unaffected areas of the project site, but this tactic will be discussed with appropriate BLM/IDL personnel familiar with the plant prior to moving the cactus.

Monitoring: Large Simpson's hedgehog cactus populations in close proximity to construction activities will be field marked for avoidance. These sites will be monitored at least once each week during the construction phase. Damaged or missing signage will be replaced as soon as possible. Site managers will casually observe these restricted areas and be responsible for taking appropriate actions if these areas are violated.

3.8.5 Noxious Weed Control

Impacts: Clearing, grading, and excavation activities associated with construction potentially creates new habitat for the invasion by weeds. The same is true where trampling, accidental spills, burns, and similar actions degrade existing native habitat. The effects of these impacts are usually permanent or at least require years to heal in arid environments like that found in the project region. Adjacent undisturbed areas are indirectly impacted by the invasion of weed species due to proximity.

Mitigation: The control of noxious weeds is difficult. Some weeds can enter the site on equipment and vehicles, while others may spread from distant areas by spores blowing onto the site in the wind. Windland will design and build the project so that the amount of ground disturbance necessary will be minimized, exposing the least amount of soil possible. Large construction equipment that will be traveling off project roads will be required to be cleaned prior to entering the site. Windland also will work with the BLM/IDL and the Cassia County Weed Control office to establish a weed control program for the project. This may entail spot spraying with an approved herbicide along disturbed areas for noxious and invasive weed species. The frequency of the spraying will be based on the season and the amount of water used for dust control, and will be adapted based on monitoring results.

Monitoring: A noxious weed inventory will be performed before the start of construction. Windland will work with the Cassia County Weed Control office to perform monthly weed surveys on the project site during the spring and summer months of the construction phase of the project.

3.8.6 Dust

Impacts: Temporary and localized impacts from dust will occur from the construction phase due to vehicular traffic, grading, other soil disturbances, and particulate matter emissions from the concrete batch plant.

Mitigation: During construction some localized increase in dust levels will be unavoidable. To minimize these levels, Windland will use water or other dust control measures on heavily used roads, and traffic speed will be held to appropriate levels. Disturbed areas will be re-vegetated as soon as possible following disturbance.

Monitoring: Periodic observations will be made from off-site to determine the amount of dust being generated, and the amount leaving the site. If the mitigation measures are found to be ineffective, alternative measures will be determined in coordination with the BLM/IDL.

3.8.7 Noise

Local noise levels will be affected temporarily by construction activities (such as equipment movement and blasting), but due to the remote nature of the site no impacts are anticipated to residences or businesses. Wildlife may avoid the project area to some degree due to construction noise but for the most part is expected to return to the area upon completion of construction.

Impacts: The project site is remote and unpopulated with the nearest single residence approximately two miles away. Albion, the nearest community is five miles away. Impacts during construction are expected to be limited to construction workers on-site, and wildlife and livestock in the immediate vicinity. If blasting is necessary this could be heard several miles away under the right weather circumstances. Once wind turbines begin operation, their noise impacts will not be significant, since the design of modern turbines results in minimal sounds even at close range.

Mitigation: All construction will take place during daylight hours. If blasting is necessary, the duration will be short and it will also take place during daylight hours to minimize any impacts to residences and communities in the area.

Monitoring: Through communications with the local communities, Windland will be kept informed of any noise complaints. If significant noise complaints are received, noise measurements will be taken along the project boundary or near the complaint sources to ascertain the true noise levels. If noise levels are found to be unsatisfactory, alternative mitigation measures will be explored.

3.8.8 Water Resources

Impacts: Ground disturbances associated with the construction of the project and its access road pose the greatest potential for impact to surface water resources in the form of sedimentation due to soil erosion. Spills or leaks of fuels, oils, or hazardous materials may affect local water resources. Several springs occur in the project area could be affected by blasting activities.

Mitigation: The use of best management practices will avoid impacts to water resources. A SWPPP and spill prevention control and countermeasures program (SPCCP) will be prepared for the project. Local springs will be monitored for changes in flow due to blasting activities during construction.

Monitoring: The SWPPP and SPCCP will include site investigation protocols. The flow through local springs near blasting areas will be monitored within an hour before and after blasting activities to determine if any changes occurred. Also, seismic monitoring will be performed at identified springs within one mile of blasting activities to ascertain the potential impacts to the spring.

3.8.9 Spill Prevention Plan

Impacts: All equipment has the potential to leak fuels, oils, and other liquids. Various fuels and lubricant products will be used at the project site, which pose spill or leak potential.

Mitigation: A SPCCP will be prepared for the project as part of the storm water program (see Section 3.4.10) as required under 40 CFR Part 112. If necessary, a site specific program will be crafted to address any issues considered unique to this project, such as:

- Inspections of truck bottoms during weed control activities
- Inspection of trucks that stay on-site for long periods (such as concrete trucks and cranes)
- Special considerations for fuel trucks
- Inspection practices for wind turbine hydraulic lines and coolant systems
- Spill clean-up protocol
- Fuel tanks should be double walled or should be located in a secondary (bunded) containment area. The secondary containment area should be able to contain at least 110% of the full volume of the fuel tank.

Monitoring: The SPCCP will include the spill monitoring protocol.

3.8.10 Fire Prevention Plan

Impacts: Fires are not common on wind energy sites as a direct result of wind energy electrical generation, because no combustion occurs as part of the generating process. However, it is possible the site could be threatened by wildfires ignited during construction activities, by lightning, or human activity on the site and in the Cotterel Mountain area. A large fire could destroy a significant amount of vegetation in the project area, and be a threat

to wildlife, livestock, and visitor safety. Such a fire could also seriously damage the wind turbines and substations.

Mitigation: The project HSE Manual will provide a list of emergency contacts and protocols in case of a fire. During construction, fire extinguishers, five-gallon backpack hand water pumps, and fire-fighting hand tools, such as shovels, pulaskis, or mcleods, will be located in the base of each wind turbine tower, in each project construction vehicle, in the substation control building, and the O&M building. Personnel performing "hot work", such as welding, will be required to have the same fire-fighting equipment listed above. Vegetative materials removed during construction will be treated or removed to reduce fire vulnerability. The water tank truck used for dust abatement will be left full of water and fuel at a location designated by the fire management officer for the BLM so that it is in a condition where it could be readily used in case of a fire. Smoking and off-road parking will be restricted to designated areas. Windland will work with the BLM Authorized Officer to establish these designated areas. Signs will be posted in strategic locations on the site to remind personnel of the emergency response procedures, liabilities, and telephone contact numbers for fire emergencies.

Normally, any ignitions that cannot be immediately controlled by project personnel acting within the purview of their training and equipment will be responded to appropriately by initial attack forces from the BLM South Central Idaho Fire Organization located in Shoshone, Burley, and Twin Falls, Idaho. However, if fire danger levels warrant additional protection, or if preparedness levels on either a local or national level become such that local forces are spread too thin to provide immediate initial attack response, the authorized officer may require that one or more wildland fire engines, of a type to be specified by the authorized officer, be stationed on the construction site for initial attack purposes. These engines may be either agency owned or private hires under Emergency Equipment Rental Agreements (EERA). They will be provided by the BLM and funded by the ROW grant holder. Contract engines will meet the minimum National Wildfire Coordinating Group (NWCG) standards for equipment used in wildland firefighting and will be inspected by Burley BLM Fire Personnel before being placed in service. Assurance of continued compliance with NWCG standards will be the responsibility of the BLM.

Mitigation will be dependent on fire conditions and other special circumstances prevailing in the project area. If necessary, site-specific actions could include but not be limited to actions such as:

- Establishment of spotter positions on key locations within the project area
- Pre-positioning fire suppression capabilities (e.g., contracted engine crews) under high or extreme fire conditions
- Restriction of certain on-site high risk activities (e.g., welding) or suspension of all construction activities when red flag conditions occur
- Avoidance of sensitive sites and/or those having high fire potential when extreme fire conditions occur
- Road closures or travel restrictions when fire dangers are high.

Determinations of need for additional protection measures will be made by the Authorized Officer.

Monitoring: If project site personnel find a fire, they will respond within the guidelines of the HSE manual and their levels of training and available equipment. If a fire is located on the site that cannot be immediately extinguished, a call will be made for emergency support and the site will be evacuated until the fire is extinguished. All fire restrictions that apply to the public also apply to work crews in the project area unless special provisions are in place and approved by the Authorized Officer.

3.8.11 Cultural Resources

Impacts: The FEIS identified 31 possible Areas of Potential Effects (APE) on Cotterel Mountain. These areas may contain artifacts of historical significance, as defined by the National Register of Historic Places. Construction within these APEs could impact, damage, or destroy these artifacts, and could degrade the cultural value of the sites. These APEs have been surveyed for cultural artifacts, and the artifacts located were left in place.

Mitigation: The anticipated boundaries of the identified APEs that are within the project construction area have been plotted on the project civil design drawings. Windland will work to avoid construction within the APEs. If construction within an APE is required to develop an efficient project, a detailed survey of the area will be performed, and any artifacts that would be impacted will be removed from the site and handled per the guidance of the BLM/IDL and either the Idaho State Historic Preservation Office or appropriate Native American Nation.

Monitoring: Field personnel will be instructed to watch for potential artifacts, especially in areas in or near identified APEs. If any artifacts are located, work in that area will cease and the BLM/IDL authorized officer or designee will be consulted. More information regarding artifact handling is provided in Section 2.6.5.

4.0 OPERATION & MAINTENANCE

The typical activities necessary to operate and maintain the Cotterel Wind Power Project are described below. A more detailed O&M plan will be developed for the project and provided to the BLM/IDL for review after all equipment has been selected and the project design completed.

The O&M plan will be a "living document" that will be periodically reviewed and revised as needed to adjust to changing site conditions or applicable requirements. As with the construction of the Cotterel Mountain Wind Power Project, operators of the project will continue to work closely with the BLM/IDL to ensure environmental monitoring and mitigation plans are efficient, appropriate, and effective. Also, adaptive management will continue to be practiced in the operations phase of the project, and any potential improvements discussed and implemented in collaboration with the BLM/IDL and using input from the Technical Steering Committee.

4.1 HEALTH, SAFETY, AND ENVIRONMENTAL PLAN

Prior to the start-up and operation of the wind energy facilities, the HSE plan will be reviewed to incorporate additional requirements for O&M for the project. Specific procedures for complying with the BLM/IDL requirements that have not already been addressed in the plan will be added to ensure the continued focus on health, safety, and environmental awareness.

4.2 PROJECT OPERATION AND MAINTENANCE PLAN

The Cotterel Mountain Wind Power Project will require an O&M plan to achieve reliable and safe operation. The plan will be prepared in conjunction with the manufacturer of the turbines.

The Cotterel Mountain Wind Power Project O&M plan, consistent with Sections 2.3.5 and 2.5.3 of the FEIS, will include descriptions of each of the following major scheduled activities:

- Project Administration and Training (see Section 4.3.1)
- Project Performance Monitoring (see Section 4.3.3)
- Scheduled Wind Turbine Maintenance (see Section 4.4.2)
- Scheduled Balance of Plant Maintenance (see Section 4.4.4)
- Environmental Monitoring (see Section 4.3.4)

As with all operating equipment, some amount of unscheduled maintenance and repair will be necessary. It is just as important that these activities, while often important and urgent, still be performed per the requirements of the POD, equipment specifications, and good industry practice. As such the O&M plan will also include descriptions of these major unscheduled maintenance and response activities:

- Unscheduled Wind Turbine Maintenance (see Section 4.4.3)
- Balance of Plant Maintenance (see Section 4.4.4)

As with the construction phase of the project, Windland understands that the project site is part of the public trust. As much as feasible, the site will be maintained and operated in a manner safe and compatible with public recreation, livestock grazing, Native American sensitivities, and other uses. During some maintenance or emergency response situations, it may be necessary to temporarily control access to a small portion of the project site to maintain public safety. Such situations will be discussed in the detailed project O&M plan.

4.3 OPERATION ACTIVITIES

The activities necessary for the efficient operation of the Cotterel Mountain Wind Power Project are described below. Maintenance activities are discussed in Section 4.4.

4.3.1 Project Administration

The administration of the Cotterel Mountain Wind Power Project includes the business activities associated with operating a wind energy project. These include staffing the project, scheduling and facilitating maintenance, providing for necessary training, monitoring the performance of the project, and reporting on the results of the environmental monitoring program. Several of these activities are discussed in more detail below.

The O&M facility will be staffed during normal business hours, and will include a supervisor and project maintenance staff. The O&M facility will be located near Highway 81 along the project access road on the north end of Cotterel Mountain.

There are no environmental impacts expected due to project administration.

4.3.2 Orientation and Training

All maintenance employees of the project will require and receive specific training regarding safe work on wind turbines, and the specific tasks necessary to provide scheduled and unscheduled wind turbine maintenance. All employees (regardless of job requirements) will be trained on the environmental management and monitoring requirements of the project ROW grant.

Additionally, it may be necessary to provide orientations to site visitors as to those aspects of environmental management they may impact by their on-site activities. These would include general site procedures for:

- Avoidance of wildlife, especially sage-grouse during the lekking season
- Requirements for control of livestock
- Noxious weed control
- Excessive dust avoidance
- Noise requirements
- Motorized access limited to site access roads
- Other procedures as appropriate for their on-site activities.

There are no environmental impacts expected due to orientation and training.

4.3.3 Wind Farm Performance Monitoring

Wind turbines generally operate autonomously guided by sophisticated computers and software. The site manager and staff monitor the performance of the turbines and initiate manual control only as needed for maintenance and troubleshooting (see Section 4.4).

Periodically, the plant management will analyze the performance trends of individual wind turbines and the overall project to ascertain the overall efficiency of operation. This analysis will utilize data collected from the wind turbines and the permanent meteorological towers. It is possible some scheduled maintenance activities would be added or adjusted to improve the performance of the project.

There are no environmental impacts expected due to project performance monitoring.

4.3.4 Environmental Monitoring

One of the major responsibilities of the site manager will be to ensure the proper environmental monitoring activities are being performed, in accordance with the requirements of the project HSE manual. Per Sections 2.3.7 and 2.5.4 of the FEIS, the environmental monitoring program will incorporate monitoring observations and additional mitigation measures as needed into standard operating procedures for the project to minimize future environmental impacts. The monitoring activities discussed with each potential environmental impact in Section 4.5, as well as those avian monitoring activities in II Environmental Protection Measures of this plan, will be incorporated into the monitoring section of the HSE manual and will include:

- Review field observations submitted by field staff, and devise additional monitoring or mitigation measures as needed
- Perform periodic inspections consistent with FEIS avian fatality monitoring requirements
- Review noxious weed control measures
- Perform periodic reviews of dust generation at the site
- Summarize results of SPCCP
- Consult with Technical Steering Committee on monitoring results and potential monitoring protocol adjustments.

The results of the environmental monitoring program will be provided to the BLM/IDL Authorized Officer on a quarterly basis.

There are no environmental impacts expected due to environmental monitoring.

4.4 MAINTENANCE ACTIVITIES

The activities necessary to perform preventive maintenance, as well as equipment repairs as needed, are described in general below.

4.4.1 Project Drive-By Inspections

Through the process of performing the operations activities discussed in Section 4.3 and the maintenance activities discussed in this section, project staff will be driving through the entire project at least every few days. As staff drives through the project to perform these activities, they will also be performing a visual inspection of the project. The purpose of this inspection is to identify any obvious problems with the wind turbines that may require maintenance. If staff identifies a turbine that may be operating in an unsafe manner, that turbine will be stopped (remotely) until the condition can be fixed. This inspection is a redundant check, as the turbine has many internal sensors to watch for any potentially unsafe operational condition.

Along with the turbines, staff will also review the condition of the project roads and other visible aspects of the project infrastructure. This will include reviewing the condition of substation fencing and components, looking for any loose trash on site, and checking for any vandalism. Any conditions found that could impact public safety, wildlife, livestock, or the environment in general that cannot be immediately fixed will be reported to the BLM/IDL Authorized Officer.

While normal project operations will allow these inspections to occur very frequently, there may be periods during which the site cannot be accessed and these inspections are suspended. Conditions causing such suspensions could include extremely high winds, blizzards, or very heavy rain. The criteria for conditions in which the site will not be accessible will be described in detail in the HSE plan, and will also be subject to the judgment of the project manager and maintenance staff.

The project drive-by inspections shall include review of environmental impacts to:

- Wildlife: Sage-Grouse (see Section 4.5.2)
- Livestock (see Section 4.5.3)
- Noxious Weed Control (see Section 4.5.5)
- Dust (see Section 4.5.6)
- Noise (see Section 4.5.7)

4.4.2 Scheduled Wind Turbine Maintenance

As with all machinery, regular scheduled preventive maintenance is the best manner to ensure wind turbines operate in a safe and efficient manner. The project O&M plan will include the scheduled minor and major maintenance and inspection activities anticipated during the calendar year, and anticipate these activities for a minimum three-year period.

Various inspections will be performed on a daily, weekly, or monthly basis. Results of these inspections are logged and used to plan future maintenance activities. Visual inspections inside the rotor head, nacelle, and tower bottom are done on a regularly scheduled basis. Information collected in these inspections is utilized to plan future maintenance activities. Particular attention will be paid to identify minor oil leaks, so that appropriate repair work can be performed before the leaks pose a potential environmental issue.

Regularly scheduled preventive maintenance activities also are performed on a daily, weekly, or monthly basis. A list of all scheduled preventive maintenance activities is included in the O&M plan. Timing and specific location of these activities will take into consideration restrictions imposed during the lekking periods.

Two annual wind turbine maintenance cycles are anticipated. These will be planned for the spring and fall months of each year. While not currently anticipated, it may be necessary for blade washing to also be performed to improve wind turbine performance. Once again, activities will be coordinated with II Environmental Protection Measures so as to address the restrictions of the lekking periods.

Over the project operational period, significant maintenance or repair events are recorded, so that underlying causes can be determined and analyzed. These analyses may lead to modifications to the turbines, project operation, or maintenance practices to improve the efficiency and safety of the project. Any modifications to the turbines that would impact their interaction with the environment will be approved by the BLM/IDL Authorized Officer.

4.4.3 Unscheduled Wind Turbine Maintenance

Wind turbine maintenance and internal inspection activities are normally performed on a scheduled basis. However, when problems occur, unscheduled maintenance will be required in order to maintain the operating efficiency of the project.

During the first several years of operation, the turbines will be new and major repairs are not anticipated. However, they cannot be ruled out. Any turbine experiencing mechanical difficulties that could result in safety or environmental risks or damage to the equipment will be taken off-line until repairs can be completed. Otherwise, repairs will be planned for the first convenient opportunity.

The three levels of unscheduled maintenance are discussed below. All potential repair activities will be described in more detail in the manuals for the wind turbine design chosen for the project.

Minor Repairs and Component Replacement

Making minor repairs to the turbines or replacing faulty internal components are the most common form of unscheduled turbine maintenance. These repairs could include:

- Replacement of wind turbine sensors
- Replacement of small motors (such as those for the yaw drive or fans)
- Replacement of small pumps (such as those for the hydraulic system or cooling system)
- Replacement of gear oil
- Replacement of coolant
- Replacement of hydraulic fluid
- Replacement of seals on generator or gearbox.

All of these repairs can be done using small tools and the turbine integrated winch system. It should not be necessary to bring even a small a crane onto the site. No vehicles other than the project pick-ups and sport-utility vehicles would likely be needed. These vehicles would stay on the project roads or at the clearing beneath each wind turbine.

Potential environmental impacts by minor wind turbine repairs include:

- Public Safety (see Section 4.5.1)
- Wildlife: Sage-Grouse (see Section 4.5.2)
- Livestock (see Section 4.5.3)
- Noxious Weed Control (see Section 4.5.5)
- Dust (see Section 4.5.6)
- Noise (see Section 4.5.7)
- Spill Prevention Plan (see Section 4.5.9)
- Hazardous Materials Storage and Removal (see Section 4.5.11)

Major Repairs and Component Replacement

Although far less common, it is possible that major components could need to be replaced during the operational phase of the project. These components could include:

- Blades
- Generator
- Gearbox
- Transformer (if in nacelle)

Such a replacement may require at least one large crane be brought back to the site. Trucks will be needed to bring the crane to the turbine location, where the crane will be assembled (see Section 3.7.2 for a discussion on crane assembly and operation). If the crane pad installed for the construction phase of the project was no longer available, such a pad would need to be installed (Section 3.2.1).

If a major component became damaged and required replacement, the turbine will be stopped and placed out-of-service until the component replacement was completed. Once the crane and replacement component arrived on-site and were prepared for service, the actual component replacement would only take one or two days. Once the new component was installed, the crane will be removed from site and the turbine returned to service. This activity will be planned to minimize crane time on site and the overall impact to the environment.

Potential environmental impacts by major wind turbine repairs include:

- Public Safety (see Section 4.5.1)
- Wildlife: Sage-Grouse (see Section 4.5.2)
- Livestock (see Section 4.5.3)
- Noxious Weed Control (see Section 4.5.5)
- Dust (see Section 4.5.6)

- Noise (see Section 4.5.7)
- Spill Prevention Plan (see Section 4.5.9)
- Hazardous Materials Storage and Removal (see Section 4.5.11)

Wind Turbine Replacement

The replacement of a complete wind turbine at a project prior to decommissioning the facility is uncommon. It would only be necessary if there were problems with the wind turbine tower or foundation, as all other components can be replaced without removing the entire turbine.

The replacement of a wind turbine would require the same crane assembly as described in Section 4.4.3 above. The wind turbine components will removed in the reverse order they were installed (see Section 3.7.3). Each of the removed components that will not be used on the replacement wind turbine would then need to be loaded onto trucks and removed from the site. After the old components have been removed, replacement components would need to be brought to the site, and arranged in a manner similar to that discussed in Section 3.7.1. The wind turbine would then be again erected using the appropriate combination of original and replacement components. Given the need to remove old components and bring new components to the site after the original wind turbine was dissembled, the entire wind turbine replacement activity could require the crane to remain on-site for a week or longer.

Windland will contact the BLM/IDL if any instance of wind turbine replacement was deemed required. While the project would strive to replace the turbine as quickly as possible, the scheduling of the replacement activities will done with regard to the sensitive times of the project site (specifically sage-grouse lekking season).

Potential environmental impacts by wind turbine replacements include:

- Public Safety (see Section 4.5.1)
- Wildlife: Sage-Grouse (see Section 4.5.2)
- Livestock (see Section 4.5.3)
- Noxious Weed Control (see Section 4.5.5)
- Dust (see Section 4.5.6)
- Noise (see Section 4.5.7)
- Spill Prevention Plan (see Section 4.5.9)
- Hazardous Materials Storage and Removal (see Section 4.5.11)

4.4.4 Balance of Plant Maintenance

While the wind turbines are the component of the project expected to require the most maintenance services, some maintenance will be needed for the balance of the plant. Those maintenance services are described below.

Substation Maintenance

The project substation will be inspected periodically to look for any obvious problems or areas of concern. Additionally, the substation will undergo an annual inspection and maintenance cycle to ensure all protection equipment is functioning properly. This generally

involves inspection of the breakers and switches to be certain they would operate as needed in a fault or emergency. Electrical connections will also be inspected and tested as needed to ensure no unsafe situations exist.

Maintenance to the substation transformer, switchgear, and buswork will require the substation be de-energized, and therefore the project shutdown. Windland will schedule this maintenance for low wind months of the year as much as possible. Most maintenance activities can be performed during a single day each year.

All substation equipment is within a fenced area, minimizing any potential impacts to the public, wildlife, or livestock. Potential environmental impacts by substation maintenance include:

- Wildlife: Sage-Grouse (see Section 4.5.2)
- Noxious Weed Control (see Section 4.5.5)
- Dust (see Section 4.5.6)
- Noise (see Section 4.5.7)
- Spill Prevention Plan (see Section 4.5.9)
- Hazardous Materials Storage and Removal (see Section 4.5.11)

Road Maintenance

Most road maintenance will be performed on an as-needed basis. Regular snow removal is expected to be required during the winter months to maintain access to the turbines and substation. It is expected that minor amounts of surface dragging, blading, or grading will be required after the spring thaw to remove vehicle ruts. Other similar surface work may be needed after periods of heavy rainfall, or just periodically due to maintenance traffic. Any identified needed repairs will be promptly addressed. Also, any culverts, drains, or other water management devices will need to be kept clear to allow effective drainage.

To mitigate against dust, the road surfaces will be watered or otherwise treated with dust control measures. These treatments will occur as needed based on weather conditions and the amount of traffic on the road. Any treatment substance other than water will only be used after consultation with the BLM/IDL Authorized Officer.

Potential environmental impacts by road maintenance include:

- Wildlife: Sage-Grouse (see Section 4.5.2)
- Noxious Weed Control (see Section 4.5.5)
- Dust (see Section 4.5.6)
- Noise (see Section 4.5.7)
- Spill Prevention Plan (see Section 4.5.9)
- Hazardous Materials Storage and Removal (see Section 4.5.11)

O&M Building Maintenance

Any maintenance requirements for the O&M Building are expected to be typical for a building of this type of construction, and will be performed on an as-needed basis. Exterior

maintenance will be performed in a timely manner so as to maintain a presentable appearance to the general public. Housekeeping and area cleanup will be done on a regular basis so as to avoid the buildup of litter and other unsightly materials.

Potential environmental impacts by O&M Building Maintenance include:

- Noise (see Section 4.5.7)
- Spill Prevention Plan (see Section 4.5.9)
- Hazardous Materials Storage and Removal (see Section 4.5.11).

4.5 POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES FOR OPERATIONS

The identified potential environmental impacts of the operation of the Cotterel Mountain Wind Power Project are discussed below. Part of staff training will include education on these issues, and the site mitigation and monitoring practices. The site manager will make easily available a method for staff to report any issues associated with the environmental impacts, keep management informed, and allow for rapid response. It will be the intention of the O&M plan that the mitigation measures discussed below be effective and keep any impacts to a minimum level. If mitigation measures are found to be ineffective, or unanticipated environmental aspects are found on the site, the project owners will work with the BLM/IDL and the Technical Steering Committee to adapt the mitigation and monitoring practices.

4.5.1 Public Safety

Given that the site is owned and administered by the BLM/IDL, the public has a right to access the site and use it for recreation. This right will be balanced with the protection of public safety, a key aspect of the site HSE plan. To accomplish this, O&M staff will address public education, site access control, fencing, and limited supervision activities.

Public Education: A project web site will be established to describe the project. The project kiosk established during construction will remain to explain current activities, and provide recommendations regarding safe practices on the project site. Additional outreach will be performed as necessary. The goal of this program is to provide information to the curious public without them needing to physically access the site.

Site Access Control: The O&M staff cannot limit public access to the site to a level lower than it was prior to the start of the construction, except in those areas where public safety could be jeopardized (or where theft-control measures are appropriate). A rough road currently exists from Highway 81 to the top of Cotterel Mountain, and it is one of the primary routes used for recreation. During construction, the lower portion of this road will be improved for operations traffic. At a point about halfway from Highway 81 to the top of Cotterel Mountain, the project access road will diverge from the existing road. At this divergence point, the new road will be gated and locked, but the existing road will be left open.

Fencing: The area around the substation will be fenced per requirements for public safety. No other permanent fencing is currently anticipated, but this plan could be adjusted if additional fencing around the O&M Building or other areas were found to be necessary for safety or security. During some scheduled or unscheduled maintenance activities that could involve open pits or other potentially unsafe areas, temporary safety fencing will be installed.

Limited Supervision: Site operations staff will not be supervising members of the public who choose to be on the project site. During some scheduled and unscheduled maintenance activities, it may be necessary to ask members of the public to maintain a minimum safe distance.

4.5.2 Wildlife

Sage-Grouse

Impacts: The success of the sage-grouse is directly dependent on the health of the sagebrush shrub-steppe community.

Mitigation: Six leks (spring courtship grounds) have been identified in the project area. Except in times of emergency, O&M activities will be scheduled to avoid working within one-half mile of known leks during the spring mating season, defined to be between one-half hour before sunrise and 11:00 a.m. between March 15 and May 15.

Monitoring: See II Environmental Protection Measures for Sage-grouse Monitoring Protocol. The site also will be monitored during drive-by inspections for the control of noxious weeds, success of vegetation re-establishment, and other factors relating to the health of the sage-grouse population. Of particular concern will be periodic observation of leks to insure these important areas remain undisturbed, especially in areas where access via new roads has been improved.

Golden Eagles

Impacts: Golden Eagles are protected under the Bald Eagle Protection Act. Three golden eagle nests were observed within the boundary of the project site, and were active during the avian monitoring performed in 2003. As with other birds, there is some potential for golden eagles to collide with operating wind turbines.

Mitigation: To avoid direct impacts on the golden eagles, the project has established exclusion areas of one-quarter mile around known active golden eagle nests. Activities within these areas will be avoided whenever possible.

Monitoring: See II Environmental Protection Measures for information on the raptor monitoring protocol.

Migratory Birds

Impacts: Potential exists for avian collisions with turbines during the operation phase of the project. Under normal daylight circumstances birds are expected to see and avoid the wind turbines. However, depending on weather conditions (e.g., fog, strong winds, or heavy rain or

snow) and light conditions, potential exists for accidental collisions with the stationary structure or moving rotors.

Mitigation: The majority of mitigation measures to avoid avian collisions with wind turbines are incorporated into the turbine design. These measures include solid tubular towers to eliminate perch locations, and slow-rotating blades for easy observation. No further mitigation measures are expected at this time. The results of avian collision monitoring, however, will be reviewed with the BLM/IDL to determine if additional mitigation measures are appropriate.

Monitoring: See II Environmental Protection Measures and the Avian Fatality Monitoring Protocol for information on the bird monitoring program.

Mule Deer

Impacts: The project will result in some unavoidable permanent loss of mule deer habitat. However, operation of the facility is expected to have no effect on mule deer once the deer have adjusted to the presence of the wind turbines.

Mitigation: The permanent loss of habitat will be avoided to the extent possible. Indirect effects that could cause degradation of remaining habitat will be minimized by controlling activities that would result in the spread of noxious weeds, avoiding impacts to areas not associated with the project, and re-vegetating areas with native vegetation where feasible.

Monitoring: No specific monitoring program is anticipated. Incidents of mule deer being impacted directly by project operation, either by being scared away from the site or by being hit by operations or maintenance vehicles, will be reported to the BLM/IDL for further action.

Mountain Lions

Impacts: Mountain lions have been observed on Cotterel Mountain. Operation of the facility is not expected to directly affect the animals as they are expected to adjust to the presence of the wind turbines and use the area much as they do presently. Mountain lions could be indirectly affected if food resources, such as the mule deer population, were significantly reduced, but this is not anticipated.
Mitigation: No specific mitigation is provided. Personnel on site are expected to be advised of the potential for occurrence of mountain lions in the area.

Monitoring: No specific monitoring program is anticipated. Incidents of mountain lions being impacted directly by project operation, either by being scared away from the site or by being hit by operations or maintenance vehicles, will be reported to the BLM/IDL for further action. Personnel on-site will be notified via signage of the potential for occurrence of mountain lions in the area.

Big Horn Sheep

Big horn sheep are not currently known to occur on Cotterel Mountain. Therefore no impacts are anticipated and no mitigation is provided.

4.5.3 Livestock

Impacts: The project is expected to result in the permanent loss of about 203 acres of rangeland from turbines, roads, and related structures. In addition to these direct effects, indirect impacts could result in degraded rangeland conditions caused by the spread of invasive and noxious weeds, which in turn is caused by the ground disturbances associated with the construction and operation of the project

Mitigation: Initial mitigation will be in the form of re-vegetation efforts applied to areas disturbed by construction activities (165 acres). Re-establishment of desirable native vegetation will take several years. Throughout the life of the facility, it will be important to control invasive and noxious weeds. The overall response of livestock to the operational wind project is difficult to assess, but in general livestock are expected to coexist with the project. Any open trenches or pits that are left unattended will be fenced for safety. If livestock are expected to be on-site during these times, the safety fencing will be chain-link rather than plastic.

Monitoring: Other than the reporting of any incidents of operations or maintenance vehicles hitting livestock, no monitoring program is anticipated for livestock. It is expected that livestock will coexist with the project without difficulty, as has been observed at other wind energy projects. If problems occur between the livestock and project operations, discussions of other mitigation measures will be held among the operations staff, ranchers, and the BLM/IDL Authorized Officer.

4.5.4 Protected Plant Species

No threatened or endangered species listed by the federal Endangered Species Act are found on the project. Simpson's hedgehog cactus (*Pediocactus simpsonii*) occurs at the site and is listed by the BLM as a special status species.

Pediocactus simpsonii

Impacts: Nearly every portion of Cotterel Mountain supports populations of *Pediocactus simpsonii* (Simpson's hedgehog cactus). The primary impact to the cactus population will be from surface disturbance. Clearing, grading, and excavation of any type will permanently eliminate any plants present. The extent of impact to the species is dependent on the site arrangement in relation to the distribution of the species on the project site.

The same impacts listed above can result in indirect impacts to the cactus. The degradation of habitat that does not support cactus but is in the vicinity of cactus populations can facilitate invasion by weeds that eventually encroach and degrade cactus habitat.

Mitigation: Once construction of the project is completed, limiting all O&M staff and vehicles to the site roads should avoid any impacts to Simpson's hedgehog cactus. If activity

is required off the site roads, O&M staff will avoid damaging any Simpson's hedgehog cactus if at all possible.

Monitoring: No particular monitoring program is expected for Simpson's hedgehog cactus.

4.5.5 Noxious Weed Control

Impacts: Trampling, accidental spills, burns, and similar actions degrade existing native habitat, creating new habitat for invasion by noxious weeds. The effects of these impacts are usually permanent or at least require years to heal in arid environments like that found in the project region. Adjacent undisturbed areas are indirectly impacted by the invasion of weed species simply due to proximity and an increase in the numbers of plants foreign to the area that produce offspring by seed or vegetative means.

Mitigation: At the completion of project construction, exposed areas will be reseeded. The spot spraying will continue until the re-vegetation has been determined to have taken effect and the risk of noxious weed spreading has been reduced. At that time the project owners will work with the BLM/IDL and the Cassia County Weed Control office to determine a weed control plan for the long-term operation of the project. Such a plan is expected to continue the use of spot spraying on a less frequent basis. If blade washing or dust control is found to be necessary, the impacts of introducing this extra water to the site will be monitored, and if necessary additional weed spot spraying will be performed. All vehicles entering the project site will be washed down at a specified location to reduce the potential for noxious weed introduction.

Monitoring: Other than the periodic review of the project site by the BLM/IDL and the Cassia County Weed Control office, no other monitoring program for noxious weeds during operation is currently expected.

4.5.6 Dust

Impacts: While expected to be minimal, temporary and localized impacts from dust caused by vehicular traffic could occur during operations activities. The amounts of dust generated are not expected to be large enough to impact vehicular traffic on Highway 81 and Interstate 84, or be a source of nuisance to local residents.

Mitigation: To minimize dust levels, project road traffic speed will be held to appropriate levels. Disturbed areas will be re-vegetated or otherwise covered as soon as possible following disturbance. During very dry periods, it may be necessary to apply water or other dust control substances to the project roads.

Monitoring: Periodic observations will be made from off-site to determine the amount of dust being generated, and the amount leaving the site. If the mitigation measures are found to be ineffective, alternative measures will be determined in coordination with the BLM/IDL.

4.5.7 Noise

Impacts: During project operation, no significant noise impacts are expected. The project site is remote and unpopulated with the nearest residence approximately two miles away.

Mitigation: No noise mitigation measures are expected to be necessary.

Monitoring: Through communications with the local communities, O&M staff will be kept informed of any noise complaints. If significant noise complaints are received, noise measurements will be taken along the project boundary or near the complaint sources to ascertain the true noise levels. If noise levels are found to be unsatisfactory, alternative operations, maintenance, or mitigation measures will be explored.

4.5.8 Water Resources

Impacts: Ground disturbances associated with the operation of the project pose the greatest potential for impact to surface water resources in the form of sedimentation due to soil erosion. Spills or leaks of fuels, oils, or other hazardous materials may affect local water resources.

Mitigation: The use of best management practices will avoid impacts to water resources. Project drainage components, such as culverts or drains, will be maintained in good working order.

Monitoring: During normal project O&M activities, signs of soil erosion will be watched for. Operations will also maintain open communication with local residents in case increased sediment in water is found.

4.5.9 Spill Prevention Plan

Impacts: All equipment has the potential to leak fuels, oils, and other liquids, and small amounts of various products may be stored at the project site, which pose spill or leak potential.

Mitigation: Any spills will be promptly cleaned in a manner appropriate for the materials, and reported to plant management. If necessary, a site specific program will be crafted to address any issues considered unique to this project, such as:

- Inspection practices for wind turbine hydraulic lines and coolant systems
- Spill clean-up protocol

Monitoring: The SPCCP will include the spill monitoring protocol.

4.5.10 Fire Prevention Plan

Impacts: Fires are not common on wind energy project sites because no combustion occurs as part of the energy generation process, and most distributional transmission lines are buried. However, it is possible the site could be threatened by wildfires from construction activities, ignited by lightning, or caused by human activity in the Cotterel Mountain area. A large fire could destroy a significant amount of vegetation in the project area, and be a threat

to wildlife, livestock, and visitor safety. Such a fire could also seriously damage the wind turbines and substations.

Mitigation: The site HSE manual will provide a list of emergency contacts and protocols in case of a fire. Fire extinguishers will be located in the base of each wind turbine tower, in each project vehicle, in the substation control building, and the O&M building. Smoking will be restricted to designated areas, and off-road parking will be restricted. Signs will be posted in periodic locations on the site to remind personnel and the public of emergency response procedures, liabilities, and contact telephone numbers.

During the O&M phase of the project, activities in the project area would generally be subject to the same fire restrictions and use parameters as those public lands outside the project area. Under circumstances where non-routine or major O&M work needs to be accomplished, the Authorized Officer shall be notified and determine the need for additional fire protection measures, which could include those identified in Section 3.8.10 of this POD.

Monitoring: If project site personnel find a fire, they will respond within the guidelines of the HSE manual and their levels of training and available equipment. If a fire is located on the site that cannot be immediately extinguished, a call will be made for emergency support and the site will be evacuated until the fire is extinguished. All fire restrictions that apply to the public also apply to personnel conducting O&M activities inside the project area.

4.5.11 Hazardous Materials Storage and Removal

While there are relatively few hazardous materials found on a wind energy project, gear oil, hydraulic fluid, and coolant can qualify and are therefore discussed below.

Impacts: In addition to causing damage to soils and plants, hazardous materials can also cause damage to humans and wildlife to whom they come into contact.

Mitigation: Hazardous materials will be clearly stored in containers appropriate for their storage and use. Project staff will be trained in the safe storage and handling practices of any on-site hazardous materials. Materials Safety Data Sheets will be in the O&M Building and easily accessible to plant personnel. If containers of such materials are required to be taken to the project site, they will be in appropriate containers and clearly labeled as hazardous in a manner clear to the general public. Storage areas for hazardous materials will include impermeable containment capable of holding at least 110 percent of all materials.

Storage and handling of hazardous materials will be in accordance with the contingency plan approved by the BLM/IDL in the Project Operations Manual, to be developed at the end of the construction-phase.

Monitoring: Monitoring of hazardous materials will be performed per the HSE manual. If an accidental release occurs, the event shall be documented and evaluated per Appendix C of the FEIS. This includes a root cause analysis, appropriate corrective action, and characterization of the resulting environmental, health, and safety impacts. As required, the release documentation will also be forwarded to appropriate federal, state, or local government agencies.

5.0 DECOMMISSIONING

As with any energy project, the Cotterel Wind Power Project will have a lifetime after which it may no longer be cost effective to continue operation. At that time, the project would be decommissioned, and the existing equipment removed. While it is possible the project owners may want to work with the BLM/IDL to re-power the site (replace existing wind energy project with a new project on the same site), re-powering is not being considered in this plan.

5.1 HEALTH, SAFETY, AND ENVIRONMENTAL PLAN

When the project moves into the decommissioning stage, the operations HSE plan will be modified to include the decommissioning activities. As decommissioning requires outside contractors, cranes, and large equipment be brought back to the site, the decommissioning HSE plan will be similar to the construction HSE plan.

Components of the Management System that will be addressed in the plan include, but are not limited to, risk management analysis, emergency response, HSE planning and procedures, implementation, monitoring and reporting results, setting performance targets, incident classification, investigation and reporting results, audits and inspections, and HSE management review.

Minimum contractor HSE requirements will be included in the plan. These are typically such requirements as personal protective equipment, housekeeping, maintaining a safe workplace, fire prevention, safe work practices, etc. Contractors are expected to comply with these requirements as a minimum. Contractor safety plans will be reviewed for compliance.

Contractor Best Management Practices will be reviewed and incorporated into the plan as appropriate.

Once the framework of the plan is completed, the project will be reviewed for site-specific HSE requirements and will be modified to incorporate them.

Also included in the HSE plan is a risk register that identifies potential hazards and the risks associated with them. Contractors are expected to address these risks and develop mitigation plans for incorporation into the register. The risk register is an evergreen document that will be used and updated on a continuous basis to identify and mitigate risks as they surface. It is conceivable that mitigation plans as developed may not prove to be sufficient as anticipated. In this case, the plan will be adjusted to provide a suitable solution to project risks.

Observation of HSE performance is a key to avoiding incidents. Project personnel will be expected to regularly observe work practices and provide positive reinforcement and guidance to fellow employees. Work practices that may be considered to place employees or the environment at risk will be identified, evaluated, and modified as necessary to eliminate or substantially reduce the risk.

5.2 PROJECT DECOMMISSIONING PLAN

The goal of project decommissioning is to remove the installed power generation equipment, and return the site to a condition as close to a pre-construction state as feasible. The major activities required for the decommissioning are:

- Wind turbine and meteorological tower removal
- Electrical system removal
- Structural foundation removal per ROW grant requirements
- Road removal
- Re-grading
- Re-vegetation

These activities are discussed in more detail in the subsequent sections. The specific requirements and approach for each activity is an estimate, since the technologies and construction techniques available when the project is decommissioned are expected to change.

5.3 WIND TURBINE/METEOROLOGICAL TOWER REMOVAL

The decommissioning activity most notable to the general public will be the removal of the wind turbines and meteorological towers. The disassembly and removal of this equipment will essentially be the same as its installation, but in reverse order.

5.3.1 Crane Movement and Assembly

When a large crane first arrives onto the project site, it will be taken to the location for its first turbine removal. The crane will be assembled on that site, and then used to disassemble the wind turbine. Once the turbine at that site is disassembled, the crane will be "walked" to the next turbine site using the cranes tracked base (see Figure 3-17). If the requirements for walking the cranes cannot be meteorological with the project roads, road improvements may be required. At locations where the road cannot be improved to within the tolerances for walking the crane, the crane will be dissembled, moved to the next site, and reassembled.

If the crane pads built for the construction of the project were subsequently removed, or no longer meet the requirements for the crane, then crane pads will need to be installed or improved.

Potential environmental impacts caused by crane movement and assembly include:

- Public Safety (see Section 5.8.1)
- Wildlife: Sage-Grouse (see Section 5.8.2)
- Livestock (see Section 5.8.3)
- Dust (see Section 5.8.6)
- Noise (see Section 5.8.7)

5.3.2 Wind Turbine/Meteorological Tower Disassembly

The large components that make up a wind turbine will be dissembled in the reverse order they were assembled. The rotor (hub and blades) are removed from the nacelle and, with the help of a smaller crane, turned horizontally and set on the ground. Next, the nacelle will removed from the top of the tower, followed by each portion of the tower. The meteorological tower would similarly be disassembled by a crane, starting with the upper tower section and moving downward.

Once the turbine rotor has been removed, a crew and small crane will disassemble it into the hub and three loose turbine blades.

Potential environmental impacts caused by wind turbine and meteorological tower disassembly include:

- Public Safety (see Section 5.8.1)
- Noise (see Section 5.8.7)

5.3.3 Component Removal

The most efficient manner for component removal will for each large component (other than the rotor) to be placed directly onto a truck bed when it is removed from the turbine. These trucks could then immediately take the component off the site. This approach would limit the need for clearing an area around the turbine base to just enough area to set down the rotor.

When the rotor is disassembled, the blades will be placed into a carrying frame similar to the one shown in Figure 3-8. The blades in the frame can then be loaded onto a truck for removal from the site. The hub can also be removed once it is disassembled from the blades.

Potential environmental impacts caused by component removal include:

- Public Safety (see Section 5.8.1)
- Wildlife: Sage-Grouse (see Section 5.8.2)
- Livestock (see Section 5.8.3)
- Dust (see Section 5.8.6)
- Noise (see Section 5.8.7)

5.4 ELECTRICAL SYSTEM REMOVAL

5.4.1 Buried Cable Removal

Between each of the turbine locations will be a buried electrical cable and fiber optic cable. Section 2.3.6 of the FEIS does not specify if these cables are to be removed. The project owners will discuss with the BLM/IDL at the time of decommissioning if it is desired to remove these cables, or leave them in place. Removing the cables will cause some environmental impact that would need to be mitigated, but leaving them in place could impact future uses for the site.

If the cables are to be removed, a trench will be opened and the cables pulled out. The cables will be cut into manageable sections and removed from the site. The trenches would then be filled with native soil and compacted. The disturbed area will re-vegetated, in a manner discussed in Section 5.7.2.

Potential environmental impacts by buried cable removal include:

- Public Safety (see Section 5.8.1)
- Wildlife: Sage-Grouse (see Section 5.8.2)
- Livestock (see Section 5.8.3)
- Plant Species: Pediocactus (see Section 5.8.4)
- Noxious Weed Control (see Section 5.8.5)
- Dust (see Section 5.8.6)
- Noise (see Section 5.8.7)
- Water Resources (see Section 5.8.8)

5.4.2 Substation Disassembly and Equipment Removal

Once the project and transmission line is de-energized, the substation will be disassembled. Major components will be removed from their foundations and placed onto trucks using a small crane. The steel structures and control building will be disassembled and removed from the site. The fence will be taken down, and fence posts removed. The gravel placed in the substation will be removed if it was not native rock removed from excavations and crushed. Native rock will be scattered on-site.

The project owners will discuss with the BLM/IDL if the substation grounding grid is to be removed or left in place. The issues associated with the removal of the grounding grid are similar to those of the buried electrical cable, discussed in Section 5.4.1 above.

Potential environmental impacts caused by substation disassembly and equipment removal include:

- Public Safety (see Section 5.8.1)
- Livestock (see Section 5.8.3)
- Noxious Weed Control (see Section 5.8.5)
- Dust (see Section 5.8.6)
- Noise (see Section 5.8.7)
- Water Resources (see Section 5.8.8)

5.4.3 Transmission Line Removal

Assuming the transmission line no longer serves a purpose for the site, it will be disassembled and removed. Initially, the wires will be removed from the tower hangers and collected for recycling. The tower structures would then be disassembled and removed, including grounding rods to six inches below grade. The areas around the poles, along with any access roads that were necessary, will be reclaimed using the procedures discussed in Section 5.7 below.

Potential environmental impacts caused by transmission line removal include:

- Public Safety (see Section 5.8.1)
- Livestock (see Section 5.8.3)
- Plant Species: Pediocactus (see Section 5.8.4)
- Noxious Weed Control (see Section 5.8.5)
- Dust (see Section 5.8.6)
- Noise (see Section 5.8.7)
- Water Resources (see Section 5.8.8)

5.5 OPERATIONS AND MAINTENANCE BUILDING REMOVAL

If an O&M building is built on site, it will need to be demolished and removed. All equipment and furniture within the building will be removed, and then the building will be demolished. All debris from the demolition will be removed from the project site. Any installed septic system will also be abandoned in a manner consistent with state and local health regulations.

Potential environmental impacts caused by O&M building removal include:

- Public Safety (see Section 5.8.1)
- Livestock (see Section 5.8.3)
- Plant Species: Pediocactus (see Section 5.8.4)
- Noxious Weed Control (see Section 5.8.5)
- Dust (see Section 5.8.6)
- Noise (see Section 5.8.7)
- Water Resources (see Section 5.8.8)

5.6 STRUCTURAL FOUNDATION REMOVAL

When the wind turbines, meteorological towers, and substation components are removed from their foundations, the foundations need to be removed per the requirements of the ROW grant. The concrete and steel in the foundations will be broken-up and removed to a depth of six inches below grade, per Section 2.3.6 of FEIS. Shallow foundations (like that for the O&M building) will be removed in their entirety. All concrete and steel debris will be removed from the site.

Potential environmental impacts caused by structural foundation removal include:

- Public Safety (see Section 5.8.1)
- Wildlife: Sage-Grouse (see Section 5.8.2)
- Livestock (see Section 5.8.3)
- Plant Species: Pediocactus (see Section 5.8.4)
- Noxious Weed Control (see Section 5.8.5)
- Dust (see Section 5.8.6)
- Noise (see Section 5.8.7)
- Water Resources (see Section 5.8.8)

5.7 CIVIL DECOMMISSIONING ACTIVITIES

5.7.1 Road Removal

The BLM/IDL will have the choice when the project is decommissioned as to whether the project access roads are to be removed. To facilitate the various uses for Cotterel Mountain, the BLM/IDL may choose to leave the roads in place. If the roads are left, maintenance of the roads will become the responsibility of the BLM/IDL.

Once all the necessary equipment and materials have been removed from an area and the road to that area is no longer needed, it can be removed. The road surface and bed materials will removed down to grade. Any materials native to Cotterel Mountain will scattered across the site, and foreign materials removed.

Potential environmental impacts caused by road removal include:

- Public Safety (see Section 5.8.1)
- Wildlife: Sage-Grouse (see Section 5.8.2)
- Livestock (see Section 5.8.3)
- Plant Species: Pediocactus (see Section 5.8.4)
- Noxious Weed Control (see Section 5.8.5)
- Dust (see Section 5.8.6)
- Noise (see Section 5.8.7)
- Water Resources (see Section 5.8.8)

5.7.2 Re-grading and Re-vegetation

For areas where equipment or materials are removed, those areas will be re-graded back to pre-construction contours (if possible). Holes where foundations have been removed to six inches will be refilled with native soils. Removed roads will be re-graded to original contours if cuts and fills make such re-grading practical. Crane pads will also be re-graded.

All areas of disturbed ground will be re-vegetated using seed mixtures specified by the BLM/IDL.

Potential environmental impacts caused by re-grading and re-vegetation include:

- Public Safety (see Section 5.8.1)
- Wildlife: Sage-Grouse (see Section 5.8.2)
- Wildlife: Golden Eagles (see Section 5.8.2)
- Wildlife: Migratory Birds (see Section 5.8.2)
- Wildlife: Mule Deer (see Section 5.8.2)
- Wildlife: Mountain Lions (see Section 5.8.2)
- Livestock (see Section 5.8.3)
- Plant Species: Pediocactus (see Section 5.8.4)
- Noxious Weed Control (see Section 5.8.5)
- Dust (see Section 5.8.6)
- Noise (see Section 5.8.7)
- Water Resources (see Section 5.8.8)

5.8 POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES FOR DECOMMISSIONING

5.8.1 Public Safety

Given that the site is owned and administered by the BLM/IDL, the public has a right to access the site and use it for recreation. This right will be balanced with the protection of public safety, a key aspect of the project HSE plan. To accomplish this, Windland will perform public education, site access control, fencing, and limited supervision activities.

Public Education: A project web site will be established to describe the status of the project, and disclose the upcoming activities. The project kiosk will remain until the end of decommissioning to explain current activities, and provide recommendations regarding safe practices on the project site. Additional outreach will be performed as necessary. The goal of this program is to provide information to the curious public without them needing to physically access the site.

Site Access Control: The project cannot limit public access to the site to a level lower than it was prior to the start of construction, except in those areas where public safety could be jeopardized (or where theft-control measures are appropriate). As the road onto the north end of Cotterel Mountain from Highway 81 will be heavily used by decommissioning vehicles, the project owners will close this road to the public during decommissioning times. Keeping the public off this road while the decommissioning vehicles and equipment are using it will enhance the safety both for the public and for the project personnel. The other roads onto the mountain will not be altered or closed.

As site access control is one of the primary means to provide for public safety, it will be closely monitored. The project owners will work with the BLM/IDL to make any necessary changes during the decommissioning period to improve public safety.

Fencing: For those areas where public safety could be endangered, Windland will install temporary fencing. The areas where temporary fencing will be used include open trenches and excavations where a fall hazard exists. Temporary fencing will also be placed around the lay-down area to limit the potential for theft and public injury. The intention is to install chain-link fencing around the lay-down areas, and around danger areas if livestock are present on the site. If no livestock are present, plastic warning fencing may be used around dangerous areas to minimize environmental impact.

Limited Supervision: During short-duration decommissioning activities such as wind turbine disassembly, Windland will have crews on-site performing the activity and monitoring overall safety. Crew members and safety monitors will be trained to ask members of the public to maintain a safe distance from the work zone. Neither the crew members nor the safety officers have the authority or responsibility of keeping all members of the public away from the decommissioning zone, especially if members of the public choose to ignore posting signs or requests for them to keep some distance from the decommissioning zone.

5.8.2 Wildlife

Sage-Grouse

Impacts: The success of the sage-grouse is directly dependent on the health of the sagebrush shrub-steppe community. Land clearing for the project may affect the area population.

Mitigation: Clearing of sagebrush community will be minimized to the maximum extent possible at the project site. In addition, methods of avoiding or minimizing fragmentation of the community will be taken into account prior to clearing.

Six leks (spring courtship grounds) have been identified in the project area. Development will avoid the on-site areas and minimize clearing, grubbing, or otherwise disturbing natural vegetation in the vicinity, especially the sagebrush shrub community. There will be no activity within one-half mile of known leks during the spring mating season, defined to be between one-half hour before sunrise and 11:00 a.m. between March 15 and May 15. Decommissioning activities are only allowed during daylight hours. Off-limit areas during the mating season will be appropriately marked so that workers in the area are aware of these sensitive areas. Notification will also be placed in areas frequented by on-site personnel (such as break rooms and restrooms) to advertise the importance of avoiding these areas.

Monitoring: Signage or other markings for restricted activity areas will be checked at minimum once each week to insure presence and proper placement. Damaged or missing signage will be replaced as soon as possible. Site managers will observe restricted areas and be responsible for taking appropriate actions if entry to these areas occurs. Persons responsible for environmental compliance will be cognizant of site clearing activities and insure that impacts to the sagebrush community are minimized to the extent possible.

Staff will also be asked to report any sightings of sage-grouse on the project site, especially near the leks during the spring mating season. Significant numbers of sage-grouse found in areas without identified leks will be reported to the BLM/IDL for further inspection.

Golden Eagles

Impacts: Golden Eagles are protected under the Bald Eagle Protection Act. Three golden eagle nests were observed within the boundary of the project site, and were active during the avian monitoring performed in 2003. As with other birds, the loss of vegetation within the project site could lead to a loss of habitat for the eagles.

Mitigation: As no wind turbines will have been installed within one-quarter mile of a golden eagle nest, no particular mitigation should be required during decommissioning.

Monitoring: The project site will be visually monitored on a weekly basis, at minimum. Any golden eagle carcasses discovered will be brought to the attention of the BLM/IDL Authorized Officer.

Migratory Birds

Impacts: The Migratory Bird Treaty Act provides protection to many birds found in the project area. On this basis impacts to migratory species could result from removal of vegetation (clearing, grubbing, etc.) during site preparation or lesser impacts such as unnecessary trampling vegetation.

Mitigation: The removal of natural vegetation (grassland, shrub, and forest communities) will be minimized to the extent possible during decommissioning. In addition the movement of personnel and equipment on site will be limited to decommissioning areas to avoid unnecessary trampling of area vegetation.

Monitoring: No particular monitoring for impacts to migratory birds will be performed during decommissioning.

Mule Deer

Impacts: Mule deer are common in the project area and are expected to avoid the site during decommissioning due to noise and related activities. Once the re-vegetation takes effect, the amount of habitat for mule deer may slightly increase.

Mitigation: Indirect effects that could cause degradation of remaining habitat will be minimized by controlling activities that would result in the spread of noxious weeds, avoiding impacts to areas not associated with the project, and re-vegetating areas with native vegetation where feasible.

Monitoring: The project site will be visually monitored on a weekly basis, at minimum, to insure that decommissioning sites, laydown areas, roadways, and associated activities potentially impacting habitat are limited to areas agreed to prior to construction. Irregularities and/or violations will be reported immediately to project management and corrective actions taken.

Mountain Lions

Impacts: Mountain lions have been observed on Cotterel Mountain. These animals, however, are reclusive and during decommissioning are expected to avoid the project site. Mountain lions could be indirectly affected if food resources, such as the mule deer population, were significantly reduced, but this is not anticipated.

Mitigation: No specific mitigation is provided. Personnel on site are expected to be advised of the potential for occurrence of mountain lions in the area.

Monitoring: No specific monitoring program is anticipated. Incidents of mountain lions being impacted directly by decommissioning, either by being scared away from the site or by being hit by construction vehicles, will be reported to the BLM/IDL for further action. Personnel on-site will be notified via signage of the potential for occurrence of mountain lions in the area.

Big Horn Sheep

Big horn sheep are not currently known to occur on Cotterel Mountain. Therefore no impacts are anticipated and no mitigation is provided.

5.8.3 Livestock

Impacts: Indirect impacts could result in degraded rangeland conditions caused by the spread of invasive and noxious weeds, which in turn is caused by the ground disturbances associated with the construction and operation of the project. The livestock are expected to adjust to the increased traffic during decommissioning.

Mitigation: Re-vegetation efforts will be applied to areas disturbed by decommissioning activities. Also, any open trenches or pits that are left unattended will be fenced for safety, and existing cattle guards will be left in place. If livestock are expected to be on-site during these times, the safety fencing will be chain-link rather than plastic. Also, there exist some livestock watering tanks and pipes on the project site. If any portions of the livestock watering system are damaged during decommissioning while livestock are on the project site, the system will be repaired as soon as possible. If no livestock are present, the system will be repaired before livestock are brought back to the site.

Monitoring: The project site will be visually monitored on a weekly basis, at minimum, to insure that decommissioning sites, laydown areas, roadways, and associated activities potentially impacting grazing lands are limited to areas agreed to prior to decommissioning. Irregularities and/or violations will be reported immediately to project management and corrective actions taken.

Staff will be asked to report any incidents of interaction with livestock, or livestock found close to the construction areas. If livestock are found to be attracted to the decommissioning traffic or activities such that it increases their risk of injury, further mitigation measures will be discussed with ranchers, which may include the project relocating the livestock to off-site grazing areas for the remainder of decommissioning.

5.8.4 Protected Plant Species

No threatened or endangered species listed by the federal Endangered Species Act are found on the project. Simpson's hedgehog cactus (*Pediocactus simpsonii*) occurs at the site and is listed by the BLM as a special status species.

Pediocactus simpsonii

Impacts: Nearly every portion of Cotterel Mountain supports populations of *Pediocactus simpsonii* (Simpson's hedgehog cactus). The primary impact to the cactus population will be from surface disturbance. Clearing, grading, and excavation of any type will permanently eliminate any plants present. In addition, trampling plants by equipment or individuals, accidental spills, or burning could affect the species as well as its habitat.

The same impacts listed above can result in indirect impacts to the cactus. The degradation of habitat that does not support cactus but is in the vicinity of cactus populations can facilitate invasion by weeds that eventually encroach and degrade cactus habitat.

Mitigation: Project decommissioning personnel will be encouraged to avoid damaging or removing a Simpon's hedgehog cactus wherever possible. Where impacts are unavoidable, it may be possible to move the cactus to unaffected areas of the project site, but this tactic will be discussed with appropriate BLM/IDL personnel familiar with the plant prior to moving the cactus.

Monitoring: Large Simpson's hedgehog cactus populations in close proximity to decommissioning activities will be field marked for avoidance. These sites will be monitored at least once each week during the decommissioning phase. Damaged or missing signage will be replaced as soon as possible. Site managers will casually observe these restricted areas and be responsible for taking appropriate actions if these areas are violated.

5.8.5 Noxious Weed Control

Impacts: Clearing, grading, and excavation activities associated with decommissioning potentially create new habitat for the invasion of weeds. The same is true where trampling, accidental spills, burns, and similar actions degrade existing native habitat. The effects of these impacts are usually permanent or at least require years to heal in arid environments like that found in the project region. Adjacent undisturbed areas are indirectly impacted by the invasion of weed species simply due to proximity and an increase in the numbers of plants foreign to the area that produce offspring by seed or vegetative means.

Mitigation: The control of noxious weeds is difficult. Some weeds may enter the site on equipment and vehicles, while others may spread from distant areas by spores blowing onto the site in the wind. All large construction equipment (such as earthmovers and cranes) will be required to be cleaned prior to entering the site. A truck wash will be established near the base of the project access road near Highway 81, and every vehicle going to the top of the mountain will have its wheels and undercarriages washed. The project owners will work with the BLM/IDL and the Cassia County Weed Control office to update the weed control program for the project decommissioning activities, which will entail spot spraying with approved pesticides along disturbed areas for noxious and invasive weed species. The frequency of the spraying will be based on the season and the amount of water used for dust control, and will be adapted based on monitoring results.

Monitoring: A noxious weed inventory will be performed before the start of decommissioning. The project owners will work with the Cassia County Weed Control office to perform monthly weed surveys on the project site during the spring and summer months of the decommissioning phase of the project.

5.8.6 Dust

Impacts: Temporary and localized impacts from dust would occur from the decommissioning phase due to vehicular traffic, grading, and other soil disturbances. Large

amounts of dust generation could impact vehicular traffic on Highway 81 and Interstate 84, and be a source of nuisance to local residents.

Mitigation: During decommissioning some localized increase in dust levels will be unavoidable. To minimize these levels, the project owners will use water or other dust control measures on heavily used roads, and traffic speed will be held to appropriate levels. Disturbed areas will be re-vegetated or otherwise covered as soon as possible following disturbance.

Monitoring: Periodic observations will be made from off-site to determine the amount of dust being generated, and the amount leaving the site. If the mitigation measures are found to be ineffective, alternative measures will be determined in coordination with the BLM/IDL.

5.8.7 Noise

Local noise levels will be affected temporarily by decommissioning activities (such as equipment movement), but due to the remote nature of the site no impacts are anticipated to residences or businesses. Wildlife will avoid the project area to some degree due to decommissioning noise but for the most part is expected to return to the area upon completion of decommissioning.

Impacts: The project site is remote and unpopulated with the nearest residence approximately two miles away. Impacts during decommissioning are expected to be limited to workers on-site and wildlife and livestock in the immediate vicinity.

Mitigation: All decommissioning will take place during daylight hours.

Monitoring: Through communications with the local communities, Windland will be kept informed of any noise complaints. If significant noise complaints are received, noise measurements will be taken along the project boundary or near the complaint sources to ascertain the true noise levels. If noise levels are found to be unsatisfactory, alternative mitigation measures will be explored.

5.8.8 Water Resources

Impacts: Ground disturbances associated with the construction of the project pose the greatest potential for impact to surface water resources in the form of sedimentation due to soil erosion. Spills or leaks of fuels, oils, or hazardous materials may affect local water resources.

Mitigation: The use of best management practices will avoid impacts to water resources. A SWPPP and SPCCP may be required for the decommissioning, if major road removal is required.

Monitoring: The SWPPP and SPCCP will include site investigation protocols.

5.8.9 Spill Prevention Plan

Impacts: All equipment has the potential to leak fuels, oils, and other liquids, and small amounts of various products may be stored at the project site, which pose spill or leak potential.

Mitigation: A SPCCP will be part of the project's HSE plan, and may also be prepared for the project as part of the storm water program as required under 40 CFR Part 112. If necessary, a site specific program will be crafted to address any issues considered unique to this project, such as:

- Inspections of truck bottoms during weed control activities
- Inspection of trucks that stay on-site for long periods (such as concrete trucks and cranes)
- Special considerations for fuel trucks
- Inspection practices for wind turbine hydraulic lines and coolant systems
- Spill clean-up protocol
- Fuel tanks should be double-walled or should be located in a secondary (bunded) containment area. The secondary containment area should be able to contain at least 110% of the full volume of the fuel tank.

Monitoring: The SPCCP will include the spill monitoring protocol.

5.8.10 Fire Prevention Plan

Impacts: Fires are not common on wind energy project sites because no combustion occurs as part of the energy generation process and most distributional transmission lines are buried. However, it is possible the site could be threatened by wildfires, fires ignited by lightning, or fires caused by human activity in the project area. A large fire could destroy a significant amount of vegetation on the site, and be a threat to wildlife, livestock, and visitor safety. Such a fire could also seriously damage the wind turbines and substations.

Mitigation: The site HSE manual will provide a list of emergency contacts in case of a fire. Fire extinguishers will be located in the base of each wind turbine tower, in each project vehicle, in the substation control building, and the O&M building. Personnel performing "hot work", such as welding, will be required to have a fire extinguisher, a five-gallon backpack hand water pump, and fire-fighting hand tool, such as a shovel, Pulaski, or a mcleod nearby. Vegetative materials removed during the decommissioning process will be treated or removed to reduce fire vulnerability. If a water truck is used for dust abatement, this piece of equipment will be maintained full of water and fuel so that it is in a condition where it could be readily used in case of fire. Smoking will be restricted to designated areas, and off-road parking will be restricted. Signs will be posted in periodic locations on the site to remind personnel of the emergency response procedures, liabilities, and contact telephone numbers.

Normally, any ignitions that cannot be immediately controlled by project personnel acting within the purview of their training and equipment will be responded to appropriately by initial attack forces from the BLM South Central Idaho Fire Organization located in Shoshone, Burley, and Twin Falls, Idaho. However, if fire danger levels warrant additional

protection, or if preparedness levels on either the local or national level reach a threshold where local forces are spread too thin to provide immediate initial attack response, the Authorized Officer may require that additional wildland fire suppression capabilities be pre-positioned in the proximity of the project area for initial attack purposes. These capabilities may be either agency-owned or contracted by the BLM under Emergency Equipment Rental Agreements (EERA). In either case, they will be funded by the ROW grant holder. Contract engines will meet minimum National Wildfire Coordinating Group (NWCG) standards for equipment used in wildland firefighting and will be inspected by Burley BLM Fire Personnel before being placed in service. Assurance of continued compliance with NWCG standards will be the responsibility of the BLM.

Mitigation will be dependent on fire conditions and other special circumstances prevailing in the project area. If necessary, specific actions could include, but not be limited to, actions such as:

- Restriction of certain on-site high risk activities (e.g., welding) or suspension of all on the ground decommissioning activities when red flag conditions occur
- Establishment of spotter positions on key locations within the project area
- Road closures or travel restrictions when fire dangers are high
- Pre-positioning fire suppression capabilities (e.g., contracted engine crews) under high or extreme fire conditions

Determination of need for additional protection measures will be made by the Authorized Officer.

Monitoring: If project site personnel find a fire, they will respond within the guidelines of the HSE manual and their levels of training and available equipment. If a fire is located on the site that cannot be immediately extinguished, a call will be made for emergency support and the site will be evacuated until the fire is extinguished. All fire restrictions that apply to the public also apply to work crews in the project area, unless special provisions are in place and approved by the Authorized Officer.

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II. Environmental Protection Measures

II ENVIRONMENTAL PROTECTION MEASURES

The holder shall commit to stringent monitoring and mitigation requirements to conserve and protect biological and cultural resources. These measures and their implementation are outlined below.

II.1 BIOLOGICAL RESOURCES

To conserve wildlife and understand the relationship and impact of the project on wildlife species, including the greater sage-grouse (SAGR), avian and bat species, and raptors, the holder shall be obligated to institute and implement the following monitoring protocols.

The holder shall implement all biological monitoring identified below by providing funding through a Cooperative Agreement to be signed by the BLM and the Holder per Appendix F of the Final Environmental Impact Statement. The Management Steering Committee (MSC) will agree on how monitoring and mitigation will be implemented to achieve the objectives stated here.

A Technical Steering Committee (TSC) shall provide oversight and guidance regarding monitoring information. The TSC shall include technically qualified representatives of the BLM, Idaho Department of Fish and Game (IDFG), United States Fish and Wildlife Service (USFWS), and the holder. Ex-officio additional members include Idaho Department of Lands, Shoshone-Bannock Tribes, the Shoshone-Paiute Tribes, local SAGR working group, and local community members. The TSC will provide information and management action recommendations to the MSC.

The MSC shall provide management oversight related to further monitoring, project adjustments to reduce biological resource impacts, and mitigation priorities and decisions. The MSC shall include managers with decision making authority representing the BLM, IDFG, USFWS, and the holder.

II.1.1 Greater Sage-grouse

SAGR have been and continue to be the subject of major federal, state, and local concern and conservation strategies throughout the American West, especially Idaho.

SAGR are documented to occur on Cotterel Mountain. There are five active SAGR leks on Cotterel Mountain within the project area. There are two known additional leks within the nearby vicinity of the project area.

To conserve and protect this species, monitoring measures to achieve the objectives identified in the "*Cotterel Mountain Annual Sage-grouse Monitoring Protocol*" shall be conducted. These measures include the following:

(1) Restrict all construction and maintenance activities that occur within 0.5 miles of an active lek between the hours of 4 am and 11 am during the lekking season (mid-March – mid-May).

(2) One field contact representative (FCR) shall be designated prior to the start of construction and approved by the BLM. The FCR will have a background based in biological or ecological studies and monitoring, and shall be responsible for ensuring compliance with protective measures for biological and cultural resources. This individual shall act as the primary resource agency contact. The FCR shall have the authority to halt construction activities if the project is not in compliance with mitigation and Best Management Practices required by the BLM. The FCR will report directly to the BLM Burley Field Office Manager or his authorized representative.

(3) The holder shall fund SAGR breeding, population, and lek studies in accordance with the protocols identified in the "*Cotterel Mountain Annual Sage-grouse Monitoring Protocol*" for a period of at least seven years, beginning with the start up of construction. Monitoring will include SAGR studies to assess impacts associated with construction and operation of the wind power project, including control sites, and studies of mitigation effectiveness. At a minimum, studies to evaluate construction and operation impacts will continue for no less than five years after the beginning of power production.

(4) If monitoring and analysis of the SAGR data indicate a disturbance or decline in the SAGR population on the project area, the TSC shall: 1) determine the design and duration of additional or expanded monitoring necessary to determine the relationship of the project to the disturbance or decline and the overall trend of SAGR population and 2) present these as recommendations to the MSC for decision. The holder shall be responsible for funding all additional monitoring or mitigation actions as decided by the MSC.

II.1.2 Avian Fatality Monitoring

The primary goal of avian fatality monitoring of wind energy developments is to provide information on direct impacts of the project on birds and bats and to reveal any turbines or other project features that are responsible for a significant percentage of the fatalities. This information will then be used to identify potential methods for reducing such significant fatalities. The secondary goal of monitoring is to provide information that can be used to reduce potential risks to birds that could result from subsequent wind energy developments.

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. §§ 703-712, July 3, 1918, as amended) will be used as a protective management tool, if needed, for any migratory species not otherwise protected at Cotterel Mountain, notably bat species. The MBTA implements various treaties and conventions between the U.S., Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Under the Act, taking, killing, or possessing migratory birds is unlawful. The Act specifically states:

> *Unless and except as permitted by regulations made as hereinafter provided in this subchapter, it shall be unlawful at any time, by any means or in any manner to pursue, hunt, take, capture, kill; attempt to take, capture, or kill; possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for*

> *shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export, any migratory bird, and part, nest, or egg of any such bird, or any product, whether or not manufactured, which consists, or is composed in whole or part, of any such bird or any part, nest, or egg thereof, included in the terms of the conventions between the United States and Great Britain for the protection of migratory birds concluded August 16, 1916 (39 Stat. 1702), the United States and the United Mexican States for the protection of migratory birds and game mammals concluded February 7, 1936, the United States and the Government of Japan for the protection of migratory birds and birds in danger of extinction, and their environment concluded March 4, 1972 and the convention between the United States and the Union of Soviet Socialist Republics for the conservation of migratory birds and their environments concluded November 19, 1976. §§ 703*
>
> *Subject to the provisions and in order to carry out the purposes of the convention, referred to in section 703 of this title, the Secretary of the Interior is authorized and directed, from time to time, having due regard to the zones of temperature and to the distribution, abundance, economic value, breeding habits, and times and lines of migratory flight of such birds, to determine when, to what extent, if at all, and by what means, it is compatible with the terms of the conventions to allow hunting, taking, capture, killing, possession, sale, purchase, shipment, transportation, carriage, or export of any such bird, or any part, nest, or egg thereof, and to adopt suitable regulations permitting and governing the same, in accordance with such determinations, which regulations shall become effective when approved by the President. §§ 704.*

The U.S. Fish and Wildlife Service (USFWS) Law Enforcement division currently enforces the MBTA. There is a possibility that migratory birds, eggs, or inhabited nests could be inadvertently killed, crushed, or abandoned during construction or operation activities at Cotterel Mountain, and these activities could be considered under the MBTA as a "take" or "kill" and result in a violation of the MBTA.

The holder shall fund avian and bat fatality monitoring using methods that have been implemented at other constructed wind projects in the United States to achieve the objectives identified in the "*Cotterel Mountain Avian Fatality Monitoring Protocol*". These measures will include the following:

(1) Biologists trained in proper search techniques will conduct fatality searches. Fatality searches will be initiated across the entire study area prior to turbine construction to estimate pre-construction natural mortality. Fatality monitoring will be conducted for no less than a period of five years beginning with the start up power production.

(2) The fatality monitoring study will begin once all the turbines are constructed and operational. The following dates will be used to define seasons: (1) spring

migration (March 16 – May 15); (2) breeding season (May 16 – August 15); (3) fall migration (August 16 – October 31) and (4) winter (November 1 – March 15).

(3) All casualties located will be photographed as found and mapped by Global Positioning System (GPS) on a detailed map of the study area that will show the location of wind turbines and associated facilities, such as power lines and towers. Casualties found will then be labeled with a unique identification number, bagged and frozen. A copy of the data sheet for each carcass will be maintained, bagged, and frozen with the carcass. This data sheet copy should remain with the carcass at all times. A certified wildlife veterinary laboratory will conduct gross necropsies of all intact, suitable avian fatalities found associated with a turbine. No bat laboratory necropsies will be conducted.

(4) Casualties or fatalities found by maintenance personnel and others not conducting the formal searches will be documented using a wildlife incidental fatality reporting system. When carcasses of animals are discovered by non-monitoring personnel, a project biologist will be contacted to identify and collect the casualty.

(5) Local wildlife biologists associated with the USFWS, the BLM, and IDFG will be contacted within 24 hours to report the casualties of any species of special concern. These agencies will be notified monthly of casualty findings throughout the duration of the study.

(6) In accordance with the protocols identified in "*Cotterel Mountain Avian Fatality Monitoring Protocol,*" avian fatality monitoring will begin within two weeks of the start of project operation. Fatality monitoring will be conducted on a year round basis, weather permitting. Monitoring will be conducted for a period of at least seven years beginning with the start up of construction. At a minimum, studies to evaluate construction and operation impacts will continue for no less than five years after the beginning of power production.

(7) Summary results of the avian and bat fatality monitoring will be submitted on a monthly basis to the TSC and the BLM, Twin Falls District, Burley Field Office. If during monitoring a significant fatality event is recorded at a single or multiple turbines, the event and the results of that days monitoring will be reported immediately to the BLM. Results regarding each year of avian and bat fatality monitoring will be summarized in an annual report. This report will include the complete data set for all fatality monitoring collected since the beginning of the facility operation. The report will be submitted to the TSC and the BLM Burley Field Office by January 15th of each year.

(8) If the results of the fatality monitoring indicate that individual turbines or groups of turbines or other project features are resulting in significant avian or bat mortalities the following measures will be implemented:

A. The TSC will meet to analyze the data and information, and determine if additional monitoring analysis or investigation is needed.

B. Depending on the results of the analyses, the TSC will advise the Field Office Manager and MSC of the need to modify the operation of a specific turbine or turbines for a specific period of time. For example, if all of the fatalities were of a single species of migrating songbird in the spring, subsequent plans for the following spring would be made. On the other hand, if fatalities were of the same species of a local raptor, a different approach could be recommended.

C. The TSC shall determine if additional monitoring or analysis are necessary to determine if the modification was successful in reducing or eliminating mortality.

D. The TSC shall make appropriate recommendations to the MSC.

E. The holder shall be responsible for funding any additional monitoring deemed necessary by the MSC.

II.1.3 Raptor Monitoring

Monitoring of both resident and migrating raptors will enhance the knowledge of the relationship of wind energy projects to raptors in the Basin and Range province of the American West. Data collected at Cotterel Mountain will provide valuable information that will assist in avoiding or minimizing potential impacts to raptors at other proposed wind energy sites within the Basin and Range province and provide information regarding the relationship of the Cotterel Wind Power Project to migratory raptors.

At Hawk Mountain in the Goshute Mountains, on a similar north-south trending Basin and Range ridge located approximately 120 miles south, southwest of Cotterel Mountain some 60,000 raptors have been banded since 1980. In addition, Hawk Watch International visually identifies some 12,000 to 25,000 raptors at its observatory each year at this location. Because Cotterel Mountain and the Goshutes are part of the same Basin and Range province and on the same raptor migration route, information collected at Cotterel Mountain will be of benefit to both the BLM and other wind energy applicants in the region. Currently the BLM has several wind energy project applications in Nevada and southern Idaho.

The primary goal of raptor monitoring is to collect annual information that will be used to help evaluate the impacts of the project construction and operation on nesting and migrating raptor species in the region. Objectives of the raptor nest studies will be to evaluate numbers and distribution of nesting raptors that may be potentially influenced by the project, and to evaluate potential effects of wind turbines and other project features on nesting success.

The holder shall fund raptor monitoring using methods that have been implemented at other constructed wind projects in the United States in an effort to meet the objectives identified in

the "*Cotterel Mountain Raptor Nesting and Migration Monitoring Protocol*" (Appendix C). These measures include the following:

(1) Helicopter surveys to locate active raptor nests will be conducted within a 2 mile buffer surrounding the outmost edge of the turbine strings. A second helicopter survey will be conducted approximately 29 days later to determine nest success and activity of later season nesters.

(2) Annual migration surveys will utilize the 18 migration survey points established during baseline data collection. Surveys will begin generally in late August and continue through late October. Surveys will be conducted six days a week (Monday through Saturday), starting at 1000 and ending at 1800 each survey-day.

(3) Raptor nesting and migration monitoring will then be initiated prior to and continue through project construction and operation phases. Annual monitoring will continue for at least five years post construction. Monitoring will include studies to assess impacts associated with construction and operation of the wind power project, including control sites, and studies of mitigation effectiveness.

(4) If monitoring and analysis of the nesting and migration data indicate a disturbance or decline in the raptor population on the project area, the TSC shall determine the design and duration of additional or expanded monitoring necessary to determine the relationship of the project to the disturbance or decline and the overall trend of raptor population(s) and it shall present these recommendations to the MSC for decision. The holder shall be responsible for funding all additional monitoring or mitigation actions as decided by the MSC.

(5) Results regarding each year of raptor nesting and migration monitoring will be summarized in an annual report. This report will include the complete data set for all monitoring collected since the beginning of the facility operation. The report will be submitted to the TSC and the BLM Burley Field Office by January 15th of each year.

II.2 CULTURAL RESOURCES

To protect cultural resources, the holder agrees to the following conditions:

(1) Identification and evaluation of historic properties and resolution of adverse effects by avoidance shall be determined through consultation with the BLM, the Idaho State Historic Preservation Officer (SHPO), consulting parties, and Tribes pursuant to Section 106 of the National Historic Preservation Act (NHPA) and implementing regulations at 36 CFR Part 800.

(2) The BLM shall ensure that all historic preservation work is carried out by or under the direct supervision of a person or persons (the Principal Investigator)

meeting, at a minimum, the standards set forth in the Secretary of the Interior's Professional Qualifications (48 FR 44738−44739).

(3) Archaeological monitoring shall be conducted before any subsurface construction or ground-disturbing activity in areas determined by the Principal Investigator and the BLM to be archaeologically sensitive in accordance with a monitoring and discovery plan approved by the BLM and the SHPO.

(4) The Principal Investigator and Biological Monitors shall attend a preconstruction meeting. The construction contract shall state the need for the meeting, and project construction will identify the specific requirements for monitoring. The meeting will allow the archaeological monitors to establish their roles and responsibilities, and protocol and point of contact information with the construction contractors.

(5) Cultural properties discovered during construction shall be reported and treated in accordance with a monitoring and discovery plan approved by the BLM and the SHPO.

(6) If human remains or funerary objects are discovered during construction, construction shall cease immediately in the area of discovery, and the BLM shall be notified by telephone followed by written confirmation. In accordance with the monitoring and discovery plan and Native American Graves Protection and Repatriation Act, the BLM shall notify and consult with Indian Tribes to determine treatment and disposition measures.

(7) The BLM shall ensure that all cultural materials and records resulting from the treatment program are curated in accordance with Idaho BLM State Policy and 36 CFR Part 79.

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A. Sage-grouse Monitoring Protocol

Cotterel Mountain Annual Sage-grouse Monitoring Protocol

Photo by T.D. Reynolds

June 28, 2006

1.0 INTRODUCTION

Greater sage-grouse (Centrocercus urophaisanus) populations have declined throughout much of their former range and have been extirpated from Arizona, New Mexico, Nebraska, and British Columbia (Connelly and Braun 1997, Schroeder *et al.* 1999, Connelly *et al.* 2004). Estimates of regional declines range from 17 to 47% (Connelly and Braun 1997). Greater sage-grouse currently occupy 56% of their historical range, which once covered approximately 1,200,000 square kilometers (km2) (Schroeder *et al.* 2004).

Due to these declines, at least seven petitions have been submitted to the U.S. Fish and Wildlife Service requesting either some populations or the entire species be listed under the Endangered Species Act. These petitions are based on concerns for long-term conservation because of potential threats to the species and the sagebrush habitats on which it depends (Wambolt 2002). A decision to give the greater sage-grouse protected status across its entire range may have significant consequences for management and use of a large part of the western United States. Presently, multiple-use management dominates approximately 70% of the sagebrush habitats, which are owned publicly (Box 1990, Poling 1991). Uses that may influence sagebrush habitats include mining, energy development, conversion to agriculture, and urbanization. Other uses, such as livestock grazing and use of off-road vehicles for recreation, also have the potential to influence habitats and populations of sage-grouse.

The greater sage-grouse is entirely dependent on sagebrush (Artemisia spp.) ecosystems that dominate much of western North America. Major characteristics of the landscape that early European explorers once described as a vast sea of sagebrush (Fremont 1845) have been altered from pre-settlement conditions. One of these characteristics is the configuration of sagebrush habitats within the larger context of the landscape. Increased edges in landscapes fragmented by roads, power-lines, fences, and other linear features promotes spread of exotic invasive species, facilitates predator movements, and isolates wildlife populations (Connelly *et al.* 2004). In addition, elevated features including fences, power poles, and towers may alter sage-grouse use of landscapes by causing grouse to avoid these areas or result in increased mortality due to direct strikes and providing perch sites for raptors and corvids.

Unfortunately, little is known about the effects of wind power development on sage-grouse use of landscapes or the species' vital rates. This knowledge will become increasingly important as more projects are proposed in sagebrush-dominated habitats and public and private groups strive to meet the nation's energy requirements while still protecting its natural resources. The Cotterel Mountain area is known to provide habitat for a relatively isolated breeding population of greater sage-grouse. Here we provide an approach to assessing both the short and long-term response of sage-grouse to the project and to mitigation implemented to balance the impacts of the project.

The objectives of sage-grouse monitoring at Cotterel Mountain will be to: (1) identify areas used for nesting, brood rearing, and wintering during the construction and operation of the project; (2) update established baseline data regarding movement, productivity, and survival; and (3) analyze monitoring data to evaluate the effects of construction and operation on sage-grouse populations.

1.1 STUDY AREA

Monitoring will take place in sagebrush-dominated habitats on Cotterel Mountain and adjacent Jim Sage and Albion mountain ranges. All areas contain sage-grouse breeding habitat, and earlier work indicated that sage-grouse from the Cotterel area move to the adjacent mountain ranges during parts of the year (G. Servheen, IDFG, personal communication).

The project right-of-way would extend for 14 miles along Cotterel Mountain and include the construction of 81-98 turbines and development of 19 miles of new road. The development may affect sage-grouse associated with 6 leks occurring within the project area and grouse occupying approximately 59,000 ha of habitat.

Brown's Bench, lying roughly 47 miles to the west of Cotterel Mountain, will serve as a control area. Brown's Bench supports communities of low sagebrush (A. arbuscula) and black sagebrush (A. nova) as well as stands of Wyoming big sagebrush (A. tridentata wyomingensis). The area contains sage-grouse breeding habitat and leks are routinely monitored by Idaho Department of Fish and Game personnel. Additionally, this area is currently the center of an intensive research effort on sage-grouse population ecology and would thus provide data allowing comparisons to population change in and adjacent to the development.

2.0 BREEDING POPULATION MONITORING AND LEK COUNTS

Sage-grouse breeding populations will be tracked annually each spring at traditional display areas (leks) on and near Cotterel Mountain, and compared with data collected by Idaho Fish and Game at other control sites, to evaluate the effect of construction and operation of the Cotterel Wind Power Project on the population. Monitoring has been conducted before construction of the project. During and following construction, monitoring will continue for a period of five years. At the end of the fifth year the monitoring effort will be evaluated to determine if additional monitoring would continue to provide useful information on the local sage-grouse population.

Lek counts will adhere to the protocol accepted by the Idaho Department of Fish and Game (Connelly *et al.* 2003), and will be conducted from approximately mid- to late- March through early May. All Terrain Vehicles (ATVs) will be used for access to the leks. All historic and any new leks identified during monitoring on Cotterel Mountain (Figure 1) will be censused a minimum of three times each during the breeding season (March-May). Lek censuses will be performed in the following manner:

1. A spot will be located that provides good visibility of the entire lek. If the lek is large, two or more vantage points may be necessary.

2. From this suitable vantage point, the observer will scan a given lek from left to right (or vice versa), counting all displaying males and females.

3. The observer will wait one to two minutes, then re-count the lek from right to left (opposite direction of first count).

4. After waiting a minimum of one to two minutes, the observer will then repeat the process. The maximum number of males and females observed during all scans will be recorded separately.

Although the Idaho Department of Fish and Game protocol suggests that counts should be discontinued one hour after sunrise, previous sage-grouse studies on Cotterel Mountain (Reynolds and Hinckley 2005) indicated that most birds continued to display until mid-morning. Therefore, counts could be continued until approximately 0830 if male grouse continue to display.

Although methods for estimating breeding population numbers from lek count data have not been rigorously tested for accuracy the following formula is considered to provide a crude estimate of minimum population numbers (Connelly *et al.* 2003). Until a better estimator is developed, this formula will be used to estimate the population of greater sage-grouse on Cotterel Mountain each spring:

$$(A/0.75)*2 = B$$

Where:

A is the sum of the maximum number of displaying males observed on all leks, 0.75 represents an estimate of the number of males not observed, 2 is the presumed sex ratio of females to males, and B is the estimated springtime population of greater sage-grouse.

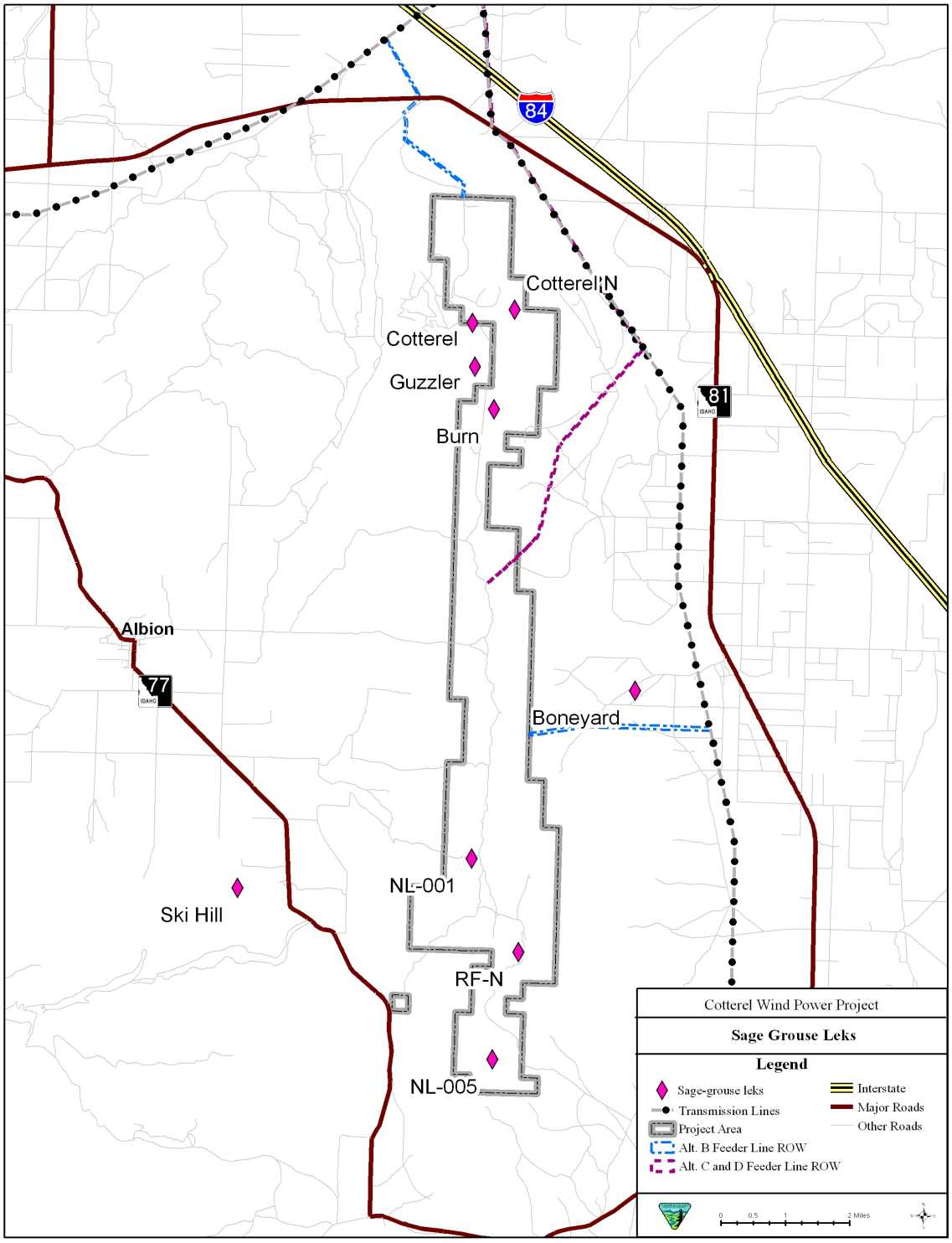

Figure 1. Sage-grouse Lek Locations on or in the Vicinity of Cotterel Mountain.

3.0 MOVEMENT, PRODUCTIVITY, AND SURVIVAL MONITORING

The annual movements of sage-grouse will be monitored in an effort to identify areas used for nesting, brood-rearing, and wintering. Sage-grouse productivity and annual survival will also be estimated. Two years of pre-construction monitoring regarding these sage-grouse parameters (TREC 2005) provides a foundation from which to measure and evaluate any potential impacts that could result from the construction and operation of wind energy development.

3.1 CAPTURE

Sage-grouse will be captured and radio-collared using backpack night-lighting techniques (Wakkinen *et al*. 1992, Connelly *et al.* 2003). Individual grouse will be sexed and aged as juveniles (has not entered into its first breeding season), sub-adults (has entered its first breeding season but not completed its second summer molt, generally 10-17 months old) or adults (has entered or is about to enter its second breeding season, generally ≥15 months old) based on characteristics of the outer wing primaries (Dalke *et al.* 1963, Connelly *et al.* 2003). Captured grouse will be leg-banded with single serially-numbered aluminum leg bands. Each lek will be assigned a color and captured grouse will be outfitted with leg bands colored to correspond with their lek of capture. All captured birds will be radio-collared with necklace-mounted radio-transmitters. Radio-transmitters provide the most useful means of documenting seasonal sage-grouse habitat selection, movements, and productivity (ISAC 2005). Radio-collars will be equipped with 4-hour mortality sensors. Grouse shall be weighed and released at the point of capture.

3.2 MONITORING AND MOVEMENTS

All marked grouse will be located monthly at a minimum. Grouse shall be located on the ground with a hand-held antenna and receiver, using the loudest signal method (Springer 1979). A fixed-wing aircraft, equipped for radio-telemetry, will be used to locate any missing grouse. During the nesting season, females will be located weekly. When a female is in the same location on two successive radio-tracking sessions, incubation will be assumed to have begun. The nest site will be inconspicuously marked by attaching a small (<10 cm) strip of plastic flagging to vegetation at ~8 m (25 ft) on either side of the nest to avoid flushing the hen from her nest, with the nest on a line between the two flags.

The distance from lek of capture to initial nest and re-nest sites will be calculated for all hens that attempt to nest. During spring and summer, movements will be estimated for individual grouse by calculating a mean distance from lek of capture to all subsequent locations. A median distance moved for both off-mountain and Cotterel Mountain sage-grouse, as well as for each gender, shall then be calculated. All movement and home range estimates will be derived using ArcGIS (Environmental Systems Research Institute 2006). A 95% fixed kernel (FK) home range will be estimated for (1) all grouse radio-marked on Cotterel Mountain and (2) all grouse captured off of Cotterel Mountain.

3.3 PRODUCTIVITY

Nesting effort will be estimated as the proportion of hens alive at the onset of nesting that attempt to nest. Re-nesting effort will be estimated as the proportion of hens that survive an initial nest failure, which then attempt to re-nest. Nest success, hatching success, hen success, clutch size, and egg fertility will be determined by inspecting nests of radio-marked hens as soon as possible after the hens have departed. A nest will be considered successful if at least one egg in the nest hatches.

Nest success will be calculated as the proportion of nests in which at least one egg hatches. Eggshell fragments with separated membranes and typical hatching pattern of the shell (Rearden 1951) will indicate a successful hatch. Hatching success will be the proportion of all eggs laid in successful nests that hatch. Hen success will be calculated as the proportion of hens that hatch at least one egg, regardless of the number of nesting attempts. Clutch size will be determined for successful nests by counting the number of un-hatched and hatched eggs present at a nest site after hatching occurs. Egg fertility will be calculated as the proportion of all eggs laid in successful nests that are fertile, based on a successful hatch or presence of a partially developed embryo in un-hatched eggs. Broods will be flushed and counted at six weeks of age using a trained hunting dog. Brood size will be calculated as the mean number of chicks per hen at six weeks of age, using all hens alive at the onset of nesting. Chick survival will be calculated as the number of chicks that survive to six weeks of age from all eggs that hatch in successful nests. Nest site fidelity will be calculated as the mean distance moved from an initial nest site from one year to the next, using only females that survive and nest in consecutive years.

3.4 SURVIVAL

Annual survival of radio-marked sage-grouse will be calculated monthly using the Kaplan-Meier method (Kaplan and Meier 1958) with staggered entry of individuals (Pollock *et al.* 1989). Grouse will be included in survival estimates only if they survive for at least one week after being outfitted with radio-collars, to ensure that mortalities are not related to capture stress or injury. Counts of sage-grouse harvested during upland game bird hunting seasons, or found to be illegally taken, during or off-season will be included in the monitoring protocols.

3.5 MITIGATION MONITORING

If off-site mitigation includes habitat enhancement or restoration projects, these areas will be monitored in accordance with II. Environmental Protection Measures, and II.1 Biological Resources.

4.0 REPORTING

Results of each year of sage-grouse monitoring will be summarized in an annual report. The report will include complete data sets for all sage-grouse monitoring data collected. The report will be submitted to the Bureau of Land Management (BLM) Burley Field Office by January 15th of each year. Preliminary and final results will be presented at scientific

meetings and final results will be published in the peer-review literature. A final project report will be completed within one year of finishing the initial five years of fieldwork.

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B. Avian Fatality Monitoring Protocol

COTTEREL MOUNTAIN AVIAN FATALITY MONITORING PROTOCOL

June 28, 2006

1.0 INTRODUCTION

The primary goals of monitoring windpower development are to evaluate risk to birds from development, as well as the cumulative risk to birds from all windpower development in the region. The secondary goal of monitoring is to provide information that can be used to reduce potential risks to birds that could result from subsequent developments (Strickland *et al.* 1996).

2.0 BASELINE STATUS INVENTORY

Several years of baseline avian inventories have been conducted at Cotterel Mountain to assess the abundance and location of birds using specific habitats in the area. The following preliminary studies have been conducted: (1) a yearlong avian point count survey; (2) a fall migration point survey; (3) a raptor nest survey; (4) a nocturnal bird migration survey using radar; (5) two sage-grouse lek surveys; and (6) a sage-grouse radio telemetry study (TBR 2004). Field methods chosen for use in the Cotterel Mountain study were derived from a review of guidelines for studying wind energy and bird interactions published by the National Wind Coordinating Committee (Anderson *et al.* 1999), and of the methods used in a number of other recent avian baseline studies at proposed wind plants in the western U.S. These baseline studies included Johnson *et al.* (1997); Johnson *et al.* (2000b); Erickson *et al*. (2001a); Sharp *et al*. (2001a), West Inc. (2002); and Young *et al*. (2002). During the point count surveys, in-transit observations were made of large birds and sensitive species while the observers were in transit between observations points. In-transit observations were entered into a separate database and analyzed separately. After analysis, these data were deemed not comparable to the point count data. Therefore, the in-transit observation data were only used in a general way to augment the species composition and richness information for the avian study areas. These studies provide a baseline status of passerine bird and bat community composition, foraging and habitat use patterns, seasonal movements, migrations, and population trends.

3.0 FATALITY MONITORING

Mortality caused by windpower facilities is a primary indicator of windpower impact on bird and bat populations. Mortality will be measured by estimating the number of bird and bat fatalities in the wind development area whose death could be directly related to turbine collision. All avian and bat fatalities located within areas surveyed, regardless of species, will be recorded and a cause of death determined, if possible, based on field examination and necropsy results. An estimate of the total number of fatalities will be made. The total number of fatalities will be estimated by adjusting for "length of stay" (scavenging) and searcher efficiency bias.

3.1 FATALITY SEARCHES

Objectives of fatality searches will be to (1) estimate the number of mortalities attributable to wind turbine collisions for the Cotterel Mountain Wind Power Project area and (2) relate the mortalities by species to the relative abundance of each species and other parameters, such as turbine characteristics and habitat to aid in determining relative risk to that species.

Biologists trained in proper search techniques will conduct the fatality searches. An initial fatality search will be conducted across the project prior to turbine construction to estimate pre-construction natural mortality.

The fatality monitoring study will begin once all the turbines are constructed and operational. The following dates will be used to define seasons: (1) spring migration (March 16 – May 15); (2) breeding season (May 16 – August 15); (3) fall migration (August 16 – October 31); and (4) winter (November 1 – March 15).

Trials have been conducted at other windpower facilities (Johnson *et al*. 2000c) to establish the size of search plots surrounding a turbine. Higgins *et al.* WEST Inc. (1996) either dropped or threw 35 birds of varying species from the tops of the turbines. The distance these birds landed from turbines ranged from 8.2 meters (m) for birds dropped, to 28.5 m for birds thrown. The mean distance that birds landed from turbines was 19.8 m for small birds and 16.2 m for medium-sized birds. Data collected on 139 suspected turbine-related avian mortalities at a wind development area in California (Orloff and Flannery 1992) supported these data. The mean distance to the nearest turbine for the 139 avian mortalities was 24.1 m, and 77% of all turbine related casualties were found within 30.5 m of a turbine. Only 4% of the fatalities were found at distances greater than 61 m from a turbine (Orloff and Flannery 1992). Based on the above data, search plot sizes will be, at a minimum, large enough to cover all areas within 50 m of a turbine (Figure 1). Cotterel Mountain may present added challenges and preliminary planning requirements regarding monitoring due to the location of adjacent cliffs and drop-offs within the 50 m survey area for each turbine. One biologist may be required to survey the base of cliffs in these areas to accurately estimate the amount of casualties occurring.

A square plot, rather than a circular plot, will be used to facilitate marking search boundaries and conducting the search. Transects will be initially set at 6 m apart in the area to be searched, and the searcher will walk along each transect searching both sides out to 3 m for casualties (Johnson *et al.* 1993). Search radius and speed will need to be adjusted by habitat type. During similar studies (Johnson *et al.* 2000c) it was observed that approximately 30 to 45 minutes will be required for searching each plot. Searches of randomly selected turbines will be conducted once every two weeks to locate and collect any fatalities found under turbines; however, casualties found at other times and places will also be recorded. For all casualties found, data recorded will include species, sex, age, date and time collected, location, distance to nearest turbine, condition, and any comments regarding possible causes of death (Johnson *et al*. 2000c). The condition of each fatality found will be recorded using the following condition categories:

- Intact – carcass that is completely intact, is not badly decomposed, and shows no sign of being fed upon by a predator or scavenger.

- Scavenged – entire carcass that shows signs of being fed upon by a predator or scavenger or a portion(s) of a carcass in one location (e.g., wings, skeletal remains, legs, pieces of skin, etc.).

- Feather Spot – 10 or more feathers at one location indicating predation or scavenging.

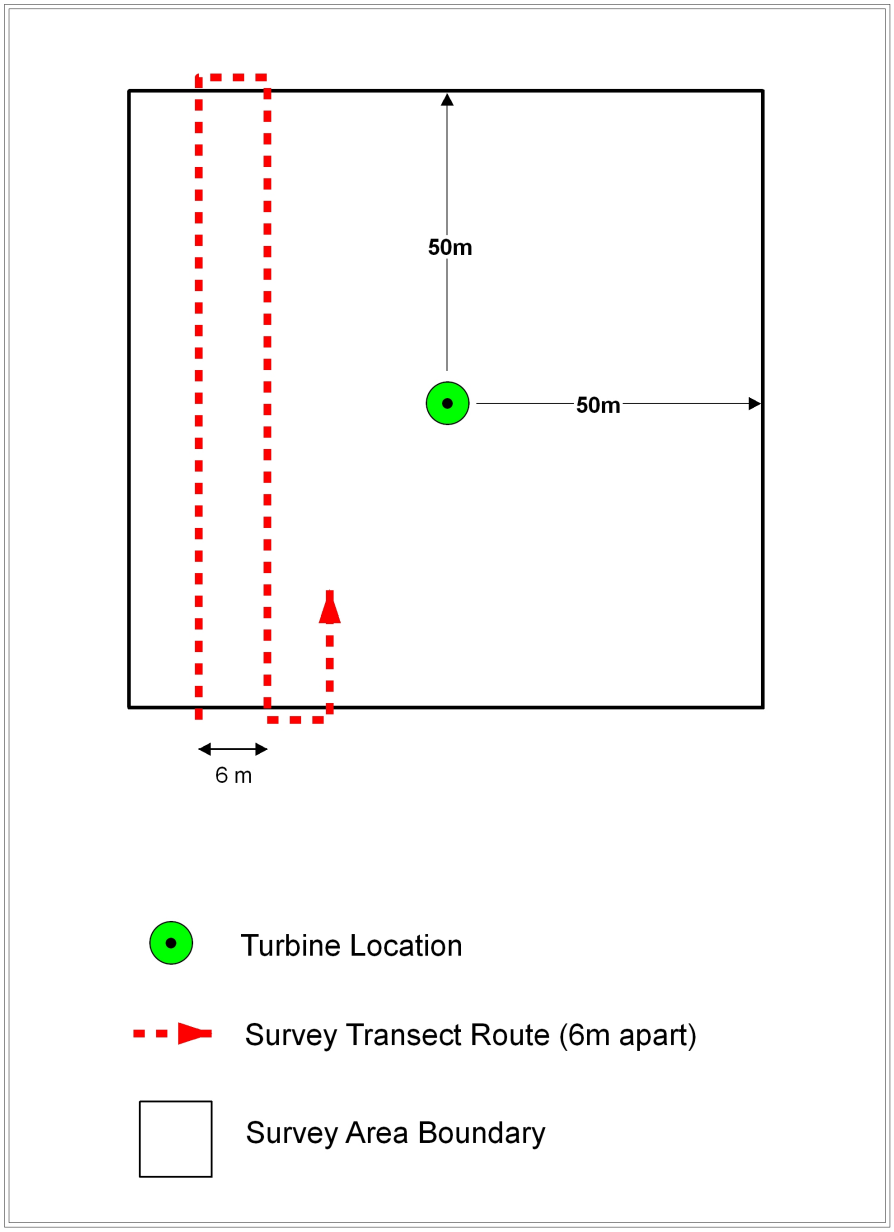

Figure 1. Diagram of a Typical Fatality Search Survey Area.

All casualties located will be photographed as found and mapped on a detailed map of the study area that will show the location of wind turbines and associated facilities, such as power lines and towers. Casualties found will then be labeled with a unique identification number, bagged, and frozen. A copy of the data sheet for each carcass will be maintained, bagged, and frozen with the carcass. This data sheet copy should remain with the carcass at all times. A certified wildlife veterinary laboratory will conduct gross necropsies of all intact, suitable avian fatalities found associated with a turbine. All bat fatalities found during the study will be assumed to be turbine-related and laboratory necropsies will not be conducted.

The estimated average number of fatalities detected per turbine (c) will be calculated by:

$$\bar{c} = \frac{\sum_{i=1}^{k} c_i}{k}$$

where c_i is the number of fatalities detected at turbine *i* for the period of study, and *k* is the number of turbines searched. The variance will be calculated by:

$$V(\bar{t}) = \frac{1}{k} * \left[\frac{\sum_{i=1}^{k} (c_i - \bar{c})^2}{k-1} \right].$$

The estimated total number of detectable fatalities (C) will be calculated by:

$$C = k * \bar{c}$$

with variance

$$Var(C) = k^2 * var(\bar{c}).$$

Local wildlife biologists associated with the U.S. Fish and Wildlife Service (USFWS), the Bureau of Land Management (BLM), and Idaho Department of Fish and Game (IDFG) will be contacted within 24 hours to report the casualties of any species of special concern (based on agency desire). These agencies will be periodically notified of casualty findings throughout the duration of the study.

In addition to standardized fatality monitoring, biologists will also record observations of birds on the study area while driving between survey points and between study sites. Emphasis will be placed on recording rare species, not previously recorded during

standardized surveys, unusual observations of bird concentrations or behavior, and any species listed as threatened, endangered, or special status by the USFWS, the BLM, or IDFG.

Casualties or fatalities found by maintenance personnel and others not conducting the formal searches will be documented using a wildlife incidental reporting system. When carcasses of animals are discovered by non-study personnel, a project biologist will be contacted to identify and collect the casualty.

3.2 FATALITY SEARCH BIASES

Estimation of Carcass Removal

The objective of carcass removal trials will be to estimate the length of time avian mortalities remain in the search area. Carcass removal studies will be conducted in the same areas and habitats where fatality searches occur on randomly selected turbine locations and reference plots. Carcass removal trials will be conducted within each of the following seasons: (1) spring migration (March 15 - May 15); (2) breeding season (May 16 - August 15); (3) fall migration (August 16 – October 31); and (4) winter (November 1 - March 14). Trials will be spread over most of the season to incorporate effects of varying weather, climatic conditions, and scavenger densities.

During the entire study, approximately 50 carcass removal trials will be conducted. Carcasses will be selected to represent a variety of avian species and size classes. Adult female mallards could be used to represent large birds such as raptors; adult rock doves could be used to simulate medium-sized birds such as small raptors; and juvenile mallards, adult house sparrows, and adult European starlings could be used to represent small birds such as passerines. Additional trials (approximately five) will be conducted with bat carcasses. The bat carcasses will be monitored during each trial to determine if removal rates for bats differed from that of birds of similar size. During removal trials at other wind power facilities (Johnson *et al.* 2000c), bats used for the trial were intact fresh bats found dead during the study; this could potentially be simulated at Cotterel Mountain as well.

Carcasses shall be placed in a variety of postures to simulate a range of conditions. They will be (1) placed in an exposed posture (e.g., thrown over the left shoulder while standing under a turbine); (2) hidden to simulate a crippled bird or bat (e.g., placed beneath a shrub or tuft of grass); and (3) partially hidden. An equal proportion of carcasses will be included in each of the above categories. Carcasses will be checked for up to 14 days to determine scavenger removal rates, and will be removed at the end of the 14-day period. Carcasses will be marked discreetly with black electrical tape on the feet so searchers can recognize the carcass as experimental and leave it at the location found. Estimates of carcass removal shall be used to adjust fatality counts for removal bias.

The length of time a carcass remained in the study area before it is removed will be denoted as t_i. Mean length of time a carcass remained at the site before it is removed (t) will be calculated by:

$$\bar{t} = \frac{\sum_{i=1}^{k} t_i}{k}$$

where k is the number of carcasses where t_i is obtained. The variance, V(t), will be calculated using the usual variance of a mean formula:

$$V(\bar{t}) = \frac{1}{k} * \left[\frac{\sum_{i=1}^{k} (t_i - \bar{t})^2}{k-1} \right].$$

Carcass removal statistics will be estimated by season, habitat type, and size class of bird.

Estimation of Searcher Efficiency

The objective of searcher efficiency trials is to estimate the percentage of avian mortalities found and missed by searchers. Searcher efficiency trials will be conducted in the same areas that fatality searches occur. Approximately 50 trials will be conducted over the course of the study. Searcher efficiency is estimated by season and major habitat type. The major habitat types on Cotterel Mountain consist of big sagebrush, low sagebrush, grassland, juniper, mountain mahogany, and rock. Estimates of searcher efficiency will be used to adjust the number of carcasses found, correcting for detectability bias. Carcasses used for searcher efficiency trials will have the same composition as those used for carcass removal trials. Searcher efficiency trials will not be conducted with bats as we assumed detectability of bats is similar to that of small birds with similar colors.

Personnel conducting searches will not know the location of searcher efficiency carcasses. All carcasses will be placed at random locations within areas being searched for fatalities prior to the search on the same day. Carcass placement will be spread over the entire season to incorporate effects of varying weather and vegetation growth. Carcasses will placed in a variety of postures (exposed, hidden, partially hidden) to simulate the range of conditions done for carcass removal trials.

Each carcass will be discreetly marked (see carcass removal studies) so that it can be identified as a study carcass after found. The number, location, and habitat of the detectability carcasses found during fatality searches will be recorded. Carcasses not found by the searcher will be removed following the search trial.

Searcher efficiency will be expressed as *p*, the estimated proportion of detectability carcasses found by searchers. Results of searcher efficiency trials will be used to evaluate effectiveness of the fatality search effort and to make adjustments for the final estimate of the total number of fatalities. The variance, V(*p*), will be calculated by the formula:

$$V(p) = p^2 * \left[\frac{V(f)}{f^2} + \frac{V(k)}{k^2} - 2 * \rho \frac{se(f)se(k)}{(f)(k)} \right]$$

where k is the total number of carcasses placed, f is the number of carcasses found, and ρ is the correlation between k and f across trials. A different searcher efficiency rate will be estimated for each habitat type and carcass size class.

3.3 ESTIMATING FATALITY TOTALS

The estimate of the total number of avian and bat fatalities will consist of the three components discussed previously: (1) the estimate and associated variance for the number of fatalities detected during the study period, (2) the estimate and associated variance for the mean length of time fatalities remained in the study area before being removed, and (3) the estimate and associated variance for the searcher efficiency rate. To calculate mortality for the entire study period, values used for searcher efficiency and mean length of stay will be weighted based on the relative proportions of each habitat type in the study area, and averaged across all three seasons. Bat mortality will be restricted primarily to summer and early fall; therefore, only searcher efficiency and scavenger removal data collected during this time period will be used to estimate total bat mortality. It will be assumed that searcher efficiency data collected using small dark brown or black birds (i.e., adult house sparrow or adult European starling) will be appropriate for estimating detection rates for bats.

The estimated total number of fatalities for the wind development area, m, for the time frame between searches will be calculated by:

$$m = \frac{N * I * C}{k * \bar{t} * p}$$

where N is the total number of turbines, I is the interval between searches in days, C is the total number of fatalities found for the period of study, k is the number of turbines sampled, t is the mean length of time fatalities remain in the study area before being removed, and p is the searcher efficiency.

The variance will be calculated using the variance of a product formula (Goodman 1960) and the variance of a ratio formula (Cochran 1977). The variance of the product t and p is:

$$V(\bar{t} * p) = \bar{t}^2 * V(p) + p^2 * V(\bar{t}) - V(\bar{t}) * V(p) \ .$$

From this, the variance of *m* is:

$$V(m) = \frac{N^2}{n^2} * I^2 * m^2 * \left[\frac{V(\bar{t} * p)}{\bar{t}^2 * \bar{p}^2} + \frac{V(\bar{c})}{\bar{c}^2} \right] .$$

The standard error of m will be calculated by:

$$SE(m) = \sqrt{Var(m)} .$$

An approximate 90% confidence interval around m is:

$$m \pm 1.67 * SE(m) .$$

3.4 QUALITY ASSURANCE/QUALITY CONTROL

QA/QC measures will be implemented at all stages of the study, including field data collection, data entry, data analysis, and report preparation. Observers will be trained in the methods used and tested on their ability to identify avian species, to estimate size of large flocks, and to estimate distance to and flight heights of birds. At the end of each survey day, each observer will be responsible for inspecting his or her data forms for completeness, accuracy, and legibility. The study team leader shall periodically review data forms to insure completeness and legibility. Standard protocol procedures detailing the step by step procedures to be followed by field biologists for fatality searches and fatality search bias trials will be prepared prior to data collection.

4.0 MONITORING TIMELINE

Fatality monitoring will be initiated within two weeks of the start of project operation. Fatality monitoring will be conducted on a year round basis, weather permitting. The monitoring will continue for a period of five years. At the end of the fifth year the monitoring effort will be evaluated to determine if additional monitoring should continue in an effort to provide useful information regarding the impact of wind power on avian and bat species at Cotterel Mountain.

5.0 REPORTING REQUIREMENTS

Summary results of the avian and bat fatality monitoring will be submitted on a monthly basis to the BLM, Twin Falls District, Burley Field Office. If during monitoring a significant fatality event is recorded at a single or multiple turbines, the event and the results of that days monitoring will be reported immediately to the BLM. Results regarding each year of avian

and bat fatality monitoring will be summarized in an annual report. This report will include the complete data set for all fatality monitoring collected since the beginning of the facility operation. The report will be submitted to the BLM Burley Field Office by January 15th of each year.

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C. Raptor Nesting & Migration Monitoring Protocol

COTTEREL MOUNTAIN RAPTOR NESTING AND MIGRATION MONITORING PROTOCOL

Photo courtesy of Tim Reynolds

June 28, 2006

1.0 INTRODUCTION

The primary goal of this study is to collect annual information that will be used to help evaluate the impacts of the Cotterel Mountain wind energy facility on nesting and migrating raptor species in the region. Objectives of the raptor nest studies will be to evaluate numbers and distribution of nesting raptors that may be potentially influenced by the project, and to evaluate potential effects of wind turbines and other project features on nesting success.

Cotterel Mountain is somewhat unique in both location and height; because of these unique features, some local biologists believe that Cotterel Mountain acts as a leading line and serves as a significant passageway for birds during fall migration. Fall migration surveys will be conducted in an effort to better understand local raptor migration patterns, and determine the level of potential impact that could result from the addition of a wind power facility on Cotterel Mountain. The objectives this raptor migration study will be to identify any general annual changes occurring in the number of raptors observed migrating, changes in species composition, or flight paths used by raptors observed migrating through the Cotterel Mountain project area.

2.0 EXISTING BASELINE STUDIES FOR COTTEREL MOUNTAIN

NESTING SURVEYS

Raptor nest surveys were conducted during May and June of 2003 on Cotterel Mountain (TREC 2004). During the survey flights 41 nests were recorded. Excluding corvids and ground nesting-species, there were 21 active and 20 inactive raptor nests. 13 sightings of birds of prey initially not associated with nests were recorded. The behavior of some of these birds suggested they were hunting or loafing, while others exhibited territorial behavior. Nests for some of these territorial birds were ultimately located during the second survey. Two groups of owl fledglings (Short-eared Owl and Great-horned Owl) were recorded. A pair of Barn-Owls loafing near a suspected cliff nest site was also recorded. Twenty raptor nests were inactive, and ranged in condition from relatively sturdy and fresh looking to dilapidated and derelict.

Survey efforts encompassed approximately 68 square miles. The density of known active nests for large raptors on Cotterel Mountain during 2003 was approximately 0.32 nests/mi^2. Raptor nesting density at other wind project sites in Oregon, Washington, Colorado, Wyoming, and Minnesota ranged from 0.03 – 0.30 nests/mi^2, with a median density of 0.16 nests/mi^2 (n = 28; Burt, In Litt. 2004). Reasons for slightly higher densities are likely due to the diversity of habitats on Cotterel Mountain, plus ample relatively inaccessible cliffs with suitable nest platforms.

MIGRATION SURVEYS

On August 21, 2003, biologists from URS and TREC identified and established a series of migration survey points on Cotterel Mountain. Points were selected mostly for their panoramic view of the ridgeline and, based on the biologists' opinions, vantage of likely migration corridors. A total of 1,299 observations of 14 species of birds of prey were recorded. Results of the 2003 fall migration survey at Cotterel Mountain suggests it to be a significant course for fall raptor migration (TREC 2003) when compared to other western-states raptor migration monitoring stations (TREC 2003, HawkWatch Intl. 2003).

3.0 METHODS

NESTING SURVEYS

Nesting surveys will focus on key habitat features for raptor species of primary interest, including, but not limited to, golden eagle (*Aquila chrysaetos*) and ferruginous hawk (*Buteo regalis*). However, the entire project area and buffer will be completely surveyed each year.

Helicopter surveys to locate active raptor nests will be conducted within a two-mile buffer surrounding the outmost edge of the turbine strings (Figure 1). A second helicopter survey will be conducted approximately 29 days later to determine nest success and activity of later season nesters, such as Swainson's hawks (*Buteo swainsoni*).

A minimum of two aerial helicopter surveys will be completed to locate and map nest sites, as well as to gather nest success data. Approximately 31 north-south transects will be flown during the survey effort (Figure 2). Locations of inactive nests will also be recorded as they may be occupied during subsequent years. All nests, whether active or inactive, will be given a unique identification number, and locations will be recorded using a Global Positioning System (GPS). When possible, the behavior (territorial defense, hunting, roosting, etc.) of nesting raptors will be recorded. The nest type (platform, scrape, other) and nest material will also be recorded when possible (Harrison, 1979).

North-south transects will be flown at 655 foot intervals at approximately 100 feet above ground level. The starting point of the aerial survey will be approximately two miles east and south of the southernmost project feature, moving each subsequent transect to the west. Key raptor habitat features, as well as previously recorded data (TREC 2004) will be utilized to determine approximate flight paths in an effort to maximize efficiency and time. Flight paths on the west slope of Cotterel Mountain will be determined by topography; when surveyors come upon the head of a canyon, the flight path will transition to east-west, traversing along both rims of every canyon. In an effort to be more efficient, the second survey (approximately 29 days later) will be flow in a serpentine pattern, concentrating on cliffs, sparse juniper habitat, other likely raptor nesting areas, and locations of nests observed during the initial survey flights (TREC 2004).

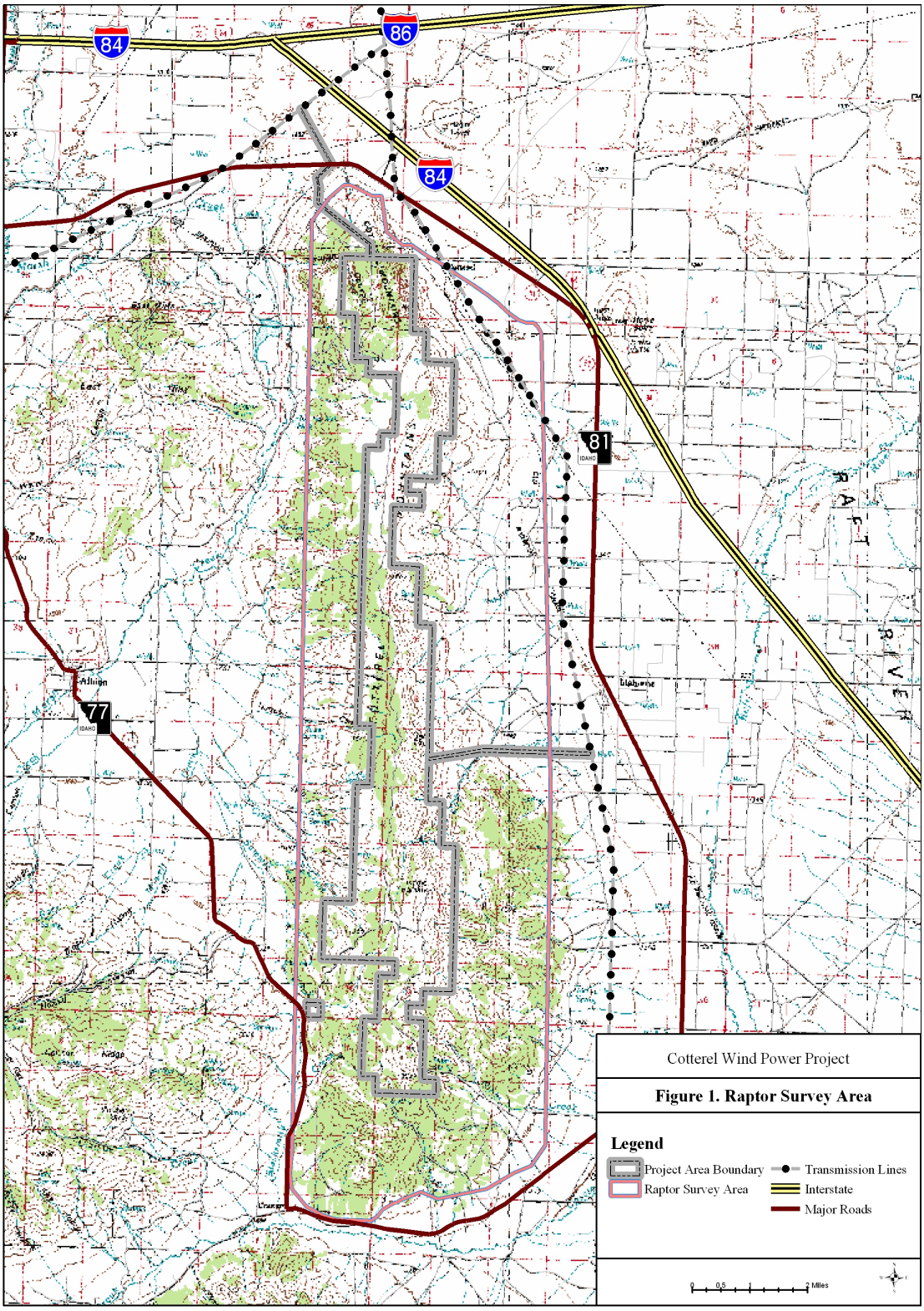

Figure 1. Raptor Survey Area.

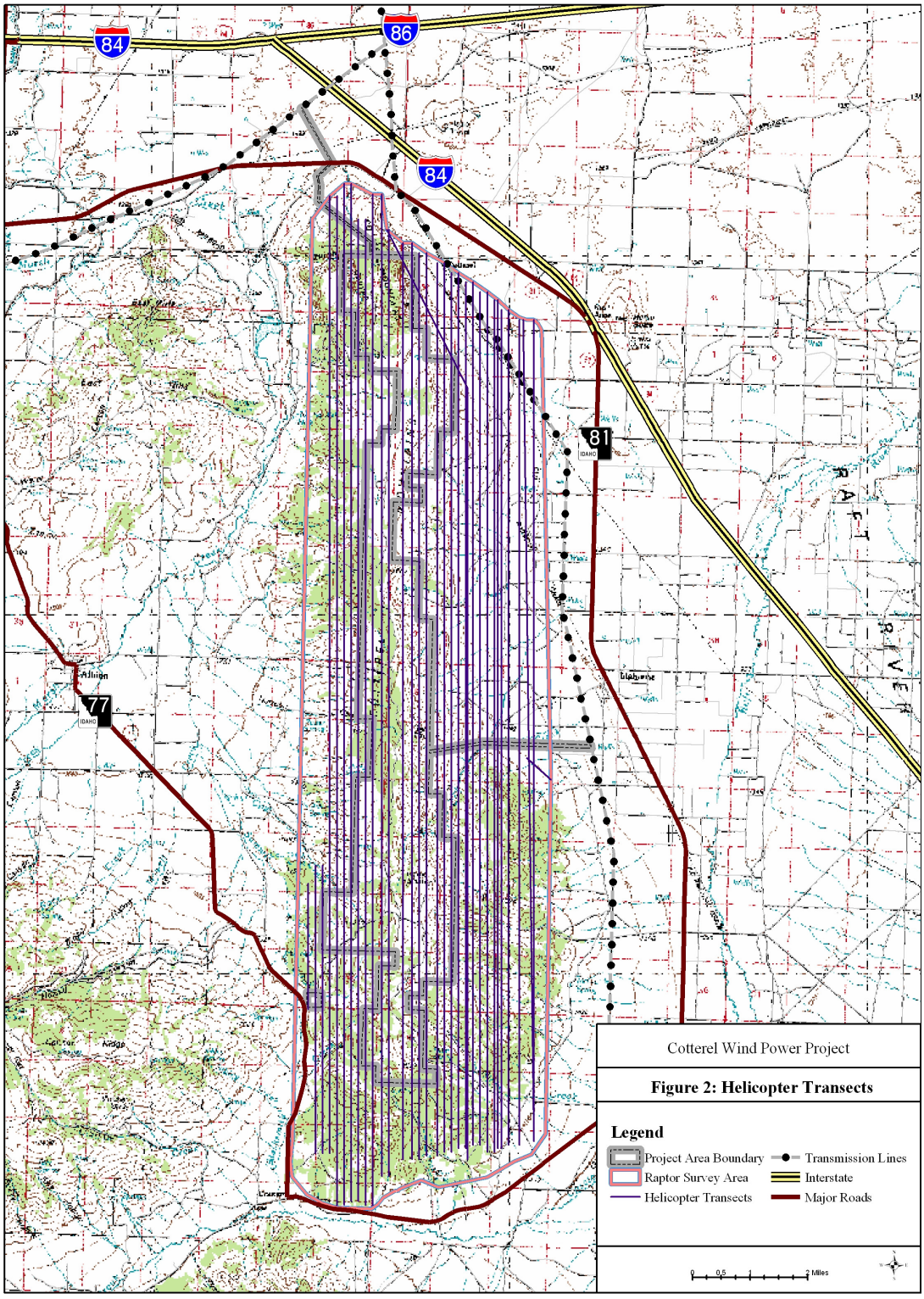

Figure 2. Typical Raptor Nest Survey Helicopter Transect Flight Path.

MIGRATION SURVEYS

Annual migration surveys will utilize the existing 18 established migration survey points (Figure 3). Survey locations may need to be adjusted or moved due to the creation of new access roads and turbine locations. Project biologists will use best professional judgment, in combination with Idaho Department of Fish and Game feedback, when establishing long-term migration survey points. Surveys will begin generally in late August and continue through late October. Data will be collected following the established protocol (Appendix A), and be recorded on standardized field data sheets (Appendix B). Surveys will be conducted six days a week (Monday through Saturday), starting at 1000 and ending at 1800 each survey-day. To reduce bias related to observer fatigue or time of day, the start point for each survey cycle will be randomized (one complete round of all 18 survey stations). Observation bouts will be 30 minutes at each station, during which time the observer will make six 360^0 sweeps with binoculars at approximately 5 minute intervals. Flight paths will be drawn on individual topographic maps for each survey station and surrounding environs. To help estimate distances accurately, field personnel will have a laser range finder at their disposal, and visible markers will be placed at known distances from each survey point.

4.0 MONITORING TIMELINE

Raptor nesting and migration monitoring will be initiated within two weeks of the start of project operation. The annual monitoring will continue for a period of five years. At the end of the fifth year the monitoring effort will be evaluated to determine if additional monitoring should continue in an effort to provide useful information regarding the impact of wind power on raptor species at Cotterel Mountain.

5.0 REPORTING REQUIREMENTS

Results regarding each year of raptor nesting and migration monitoring will be summarized in an annual report. This report will include the complete data set for all monitoring collected since the beginning of the facility operation. The report will be submitted to the BLM Burley Field Office by January 15th of each year.

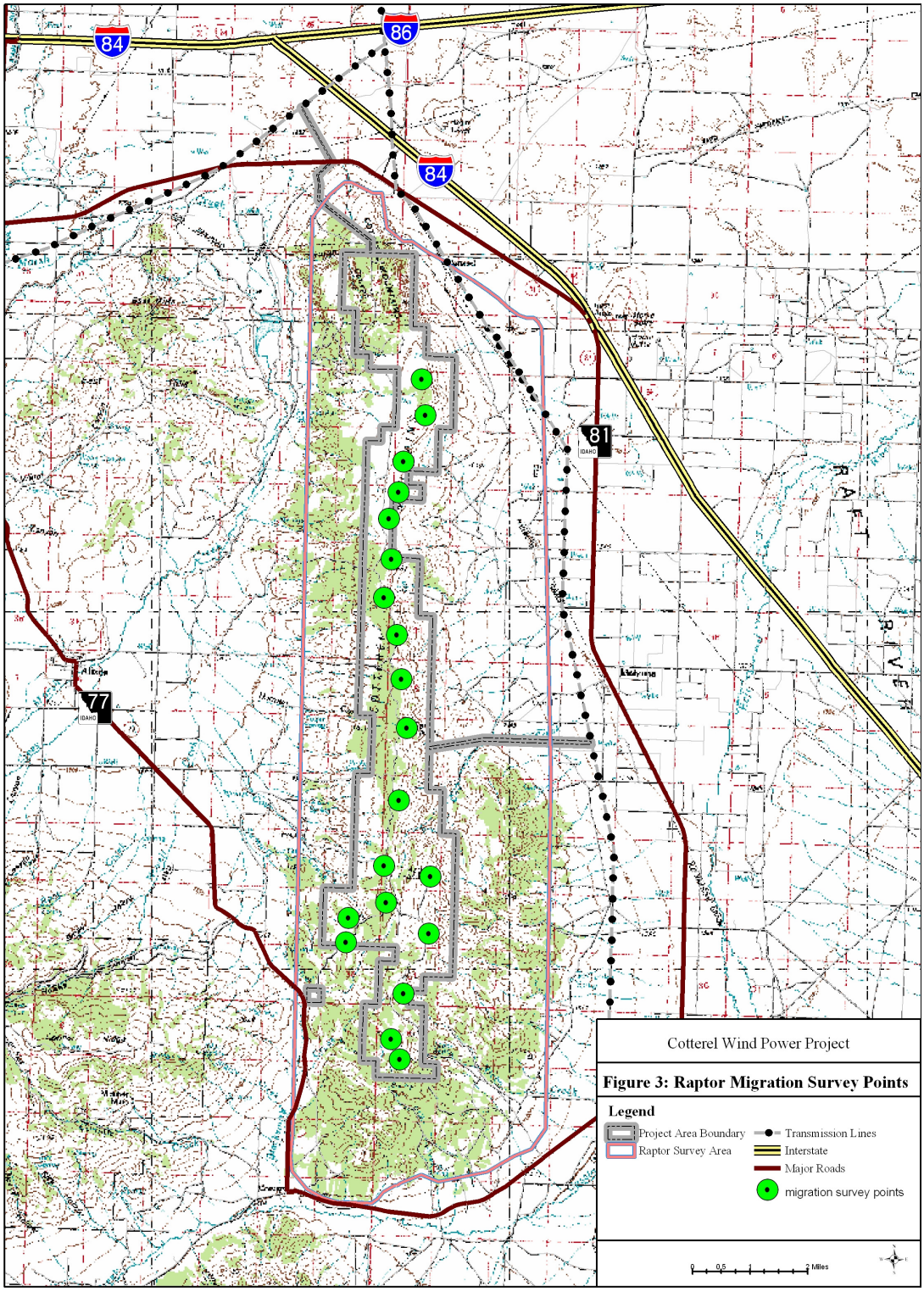

Figure 3. Raptor Migration Survey Points.

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APPENDIX A

Avian Migration Survey Protocol

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Avian Migration Survey Protocol
Cotterel Mountain Wind Project

- Avian Migration Surveys (AMS) will be conducted from 18 pre-determined locations (Stations) along the three proposed primary wind turbine strings on Cotterel Mountain.
- AMS will be conducted from 1000 – 1800 hours, daily except Sunday.
- AMS will be conducted for 30 minutes at each station.
- During the 30 minute survey period, the observer will make six 360^0 sweeps with binoculars at 5 minute intervals.
- Stations will be visited in a random order to avoid time-of-day and observer-fatigue bias.
- All birds observed will be recorded on the data sheets.
- Flight paths of all individual raptors and flocks (> 5 individuals) of other birds will be sketched on the data sheet regardless of distance from the observer (there is no "count circle").
- Data Sheet
  1. Observation Number: Used to map flight paths
  2. Time of day (24 hr clock)
  3. Species: Standard AUO alphanumeric abbreviations
  4. Sex (if determinable, otherwise "?")
  5. Age (A = adult; HY = hatch year; AHY = after hatch year)
  6. Number of individuals
  7. Distance (in meters): from observer when first observed and when closest to observer
  8. Activity:
     - PE = Perched
     - SO = Soaring
     - FL = Flapping Flight
     - CS = Circle Soaring
     - HU = Hunting
     - OT = Other (explain in comment section)
  9. Migrant ? In your opinion is this a migrating bird/flock? Y = Yes, N = No.
  10. Height (in meters) when first observed, lowest, and highest.
  11. Flight direction (16 point cardinal direction; N, NNE, ENE, E, ESE, etc.)
  12. Check any and all of the six binocular sweeps in which the bird(s) was (were) observed.
  13. Add any additional comments.

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APPENDIX B

Avian Migration Observer Data Sheet

and

In Transit and Incidental Observation Form

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Cotterel Mountain Wind Project

AVIAN MIGRATION OBSERVATION DATA SHEET

DATE (mmddyy)_____ OBSERVER_____ START TIME_____ END TIME_____ **Station**____

WEATHER: VISIBILITY(circle one) good fair poor CLOUD COVER (%)_____ TEMP_____ (°C) (°F) (circle one

WIND: DIRECTION (circle one) N NE E SE S SW W NW n/a SPEED Low:_____ High:_____ (kph) (mph) (circle one) Page__of ___

PRECIPITATION (circle one) none (n) light rain (lr) rain (r) light snow (ls) snow (sn) sleet (sl) hail (h) other (o), describe in comments

Obs. No.	Time (24 hr clock)	Species or best possible ID	Sex	Age	No. of ind.	Dist.(m) from obs. 1st//closest	Activity			Mig rant?	Flight Height (meters)			Flight Dir. (to)	Sweep number						Comments
											1st	low	high		1	2	3	4	5	6	
1							PE	SO	FL												
							CS	HU	OT												
2							PE	SO	FL												
							CS	HU	OT												
3							PE	SO	FL												
							CS	HU	OT												
4							PE	SO	FL												
							CS	HU	OT												
5							PE	SO	FL												
							CS	HU	OT												
6							PE	SO	FL												
							CS	HU	OT												
7							PE	SO	FL												
							CS	HU	OT												
8							PE	SO	FL												
							CS	HU	OT												
9							PE	SO	FL												
							CS	HU	OT												
10							PE	SO	FL												
							CS	HU	OT												
11							PE	SO	FL												
							CS	HU	OT												
							CS	HU	OT												

COTTEREL MOUNTAIN PROJECT FALL MIGRATION INTRANSIT AND INCIDENTAL DATA FORM

DATE _____OBS_____START TIME_____ENDTIME_____ OBSERVER_____DATA FORM ID _____

COMMENTS ON WEATHER OR OTHER NOTABLE CONDITIONS/CHANGES:

Obs. No.	Time	Species	Sex	Age	# of ind.	Distance from obs.	Flight height			Between points?	NOTES
							1st	low	high		

2. Right-of-Way (ROW) Grant

2. Right-of-Way Grant

Cotterel Wind Power Project

Windland, Inc. (Windland)

IDI-33676

August 2006

FORM 2800-14
(August 1985)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
RIGHT-OF-WAY GRANT

SERIAL NUMBER IDI-33676

1. a. A right-of-way is hereby granted pursuant to Title V of the Federal Land Policy and Management Act of October 21, 1976 (90 Stat. 2776; 43 U.S.C. 1761).

2. Nature of Interest:

   a. By this instrument, the holder:

   Windland, Incorporated (Cotterel Mountain Wind Power, LLC)
   7669 W. Riverside Dr. #102
   Boise, ID 83714

   receives a right to construct, operate, maintain, and terminate a *WIND ENERGY PROJECT containing wind turbines, concrete pad mounted transformers, wind data collection (meteorological) towers, roads, buried power distribution and communications lines, an overhead power transmission line, a power sub-station, an operations and maintenance building, and temporary facilities such as a concrete batch plant, a portable rock crusher, turbine component lay down areas, staging areas, crane assembly areas, and an office trailer, as described in the attached Plan of Development (POD),* on public lands described as follows:

See Attached Legal Description (Exhibit "A") and Location Map (Exhibit "B")

   b. The right-of-way area granted herein is divided into three components, main access roads, power transmission lines, and turbine strings. The area granted for the main access roads is 30 feet wide, 24,242 feet in length, and contains 16.7 acres, more or less. The area granted for the overhead power transmission lines is 100 feet wide, 33,264 feet in length, and contains 76.4 acres, more or less. The area granted for the turbine strings, which contains facilities as described above and in the attached POD, is approximately 2,640 feet wide, 73,920 feet in length, and contains 4,500 acres, more or less.

c. This instrument shall terminate on December 31, 2036 , unless, prior thereto, it is relinquished, abandoned, terminated, or modified pursuant to the terms and conditions of this instrument or of any applicable Federal law or regulation.

d. At the discretion of the Authorized Officer this instrument may be renewed. Authorized Officer means any employee of the Department of the Interior to whom has been delegated the authority to perform the duties described in 43 CFR Part 2800. In respect to this grant, this authority has been delegated to the Field Manager, Burley Field Office, Bureau of Land Management. If renewed, the right-of-way grant shall be subject to the regulations existing at the time of renewal and any other terms and conditions that the Authorized Officer deems necessary to protect the public interest.

e. Notwithstanding the expiration of this instrument or any renewal thereof, early relinquishment, abandonment, or termination, the provisions of this instrument, to the extent applicable, shall continue in effect and shall be binding on the holder, its successors, or assigns, until they have fully satisfied the obligations and/or liabilities accruing herein before, or on account of, the expiration, renewal, early relinquishment, abandonment, or termination of the grant.

3. Rental:

For and in consideration of the rights granted, the holder agrees to pay the Bureau of Land Management fair market value rental as determined by the Authorized Officer unless specifically exempted from such payment by statute or regulation.

Per BLM's Wind Energy Policy, the rental fee for a commercial wind energy development right-of-way grant on public land is established at $2,365 per megawatt of the total anticipated installed capacity of the wind energy project on public land based on the approved POD, a capacity factor of 30 percent, a royalty of 3three percent, and an average purchase price of $0.03 per kilowatt hour. The rental fee is a fixed annual Bureauwide rent based on the following formula:

> Annual rent = (Anticipated total installed capacity in kilowatts as identified in the approved POD) x (8760 hours per year) x (30 percent capacity factor) x (3 percent royalty) x ($0.03 average price per kilowatt hour)

Example for one megawatt (1,000 kW) of anticipated total installed capacity on public land:

> Annual rent = (1,000 kW) x (8760 hours) x (0.30 capacity) x (0.03 royalty) x ($0.03 per kWh) or $2,365 per megawatt of anticipated total installed capacity on public land.

The annual rental fee will be phased in as follows upon the start of commercial operations of the project based on the actual installed capacity:

First year - 25 percent of the total rental fee or $591 per megawatt;
Second year - 50 percent of the total rental fee or $1,182 per megawatt;
Third year -100 percent of the total rental fee or $2,365 per megawatt.

The rental fee is paid annually, in advance, on a calendar year basis consistent with the regulations (43 CFR 2806.12). Any separate linear right-of-way authorizations issued for off-site facilities to support the wind energy project, such as electrical transmission lines, will be subject to the linear right-of-way rental provisions of the regulations (43 CFR 2806.20).

4. Terms and Conditions:

a. This grant is issued subject to the holder's compliance with all applicable laws and regulations and, in particular, with the regulations contained in Title 43 Code of Federal Regulations Part 2800.

b. Upon grant termination by the Authorized Officer, all improvements shall be removed from the public lands within 360 days, or otherwise disposed of as provided in paragraph (4)(d), or as directed by the Authorized Officer.

c. The grant shall, at a minimum, be reviewed by the Authorized Officer at the end of the 20th year and at regular intervals thereafter not to exceed 10 years. The grant however, may be reviewed at any time deemed necessary by the Authorized Officer in accordance with the regulations (43 CFR 2805.15).

d. The Plan of Development and its associated Environmental Protection Measures, including the Cotterel Mountain Annual Sage-grouse Monitoring Protocol, Cotterel Mountain Avian Fatality Monitoring Protocol, and Cotterel Mountain Raptor Nesting and Migration Monitoring Protocol, are incorporated in and made a part of this grant instrument as fully and effectively as if they were set forth herein in their entirety.

e. The ROW grant stipulations (Appendix A to the ROW grant), include legal descriptions, maps, and designs, set forth in Exhibit(s) "A", "B", "C", and "D" respectively, dated August 2006, attached hereto, are incorporated in and made a part of this grant instrument as fully and effectively as if they were set forth herein in their entirety.

f. Failure of the holder to comply with applicable law or regulations or any terms, conditions, or stipulations of this right-of-way grant shall constitute grounds for suspension or termination thereof.

g. The holder shall perform all operations in a good and workmanlike manner as described in the Plan of Development so as to ensure protection of the environment and the health and safety of the public.

h. The right-of-way grant may be assigned consistent with the provisions of the regulations (43 CFR 2807.21), but all assignments are subject to approval by the BLM Authorized Officer. In addition, the qualifications of all assignees must comply with the requirements of the regulations (43 CFR 2804.12(a)(5) and 43 CFR 2804.26(a)(5)). A partial assignment of the grant shall not be approved if such action would hinder the BLM management of the grant or the associated public lands.

IN WITNESS WHEREOF, the undersigned agrees to the foregoing provisions of this right-of-way grant.

WINDLAND, INC.	U.S. DEPARTMENT OF THE INTERIOR
(Signature of Holder)	(Signature of Authorized Officer)
(Title)	(Title)
(Date)	(Date)

Appendix A
ROW Grant Stipulations

IDI-33676

APPENDIX A
RIGHT-OF-WAY GRANT STIPULATIONS

PROJECT PLANNING, DESIGN AND COMPLIANCE

1. The holder shall construct, operate, maintain, and terminate the facilities, improvements, and structures within this right-of-way in strict conformity with the Plan of Development and Environmental Protection Measures set forth in this grant. The Environmental Protection Measures include: the Cotterel Mountain Annual Sage-grouse Monitoring Protocol, Cotterel Mountain Avian Fatality Monitoring Protocol, and Cotterel Mountain Raptor Nesting and Migration Monitoring Protocol. Any relocation, additional construction, or use that is not in accord with the approved Plan of Development shall not be initiated without the prior written approval of the Authorized Officer. A copy of the complete right-of-way grant, including all stipulations and approved Plan of Development, shall be made available to the Authorized Officer on the right-of-way area during construction, operation, and termination activities. If BLM determines that the Holder has violated one or more of the terms, conditions, or stipulations of this right-of-way grant, BLM can order an immediate temporary suspension of activities within the right-of-way area to protect public health or safety or the environment. (43 CFR 2807.16)

2. The holder shall contact the Authorized Officer at least 14 days prior to the anticipated start of construction or any surface disturbing activities. The Authorized Officer may require and schedule a preconstruction conference with the holder prior to the holder's commencing construction or surface disturbing activities on the right-of-way. The holder or his representative shall attend this conference. The holder's contractor or agent involved with construction or any surface-disturbing activities associated with the right-of-way shall also attend this conference to review the stipulations of the grant including the Plan of Development.

3. The holder shall designate a representative(s) who shall have the authority to act upon and to implement instructions from the Authorized Officer. The holder's representative shall be available for communication with the Authorized Officer within a reasonable time when construction or other surface-disturbing activities are underway.

4. The holder shall not initiate any construction or other surface-disturbing activities on the right-of-way without the prior written authorization of the Authorized Officer. Such authorization shall be a written notice to proceed issued by the Authorized Officer. Any notice to proceed shall authorize construction or use only as therein expressly stated and only for the particular location or use therein described.

5. The Authorized Officer may suspend or terminate in whole, or in part, any notice to proceed which has been issued when, in his judgment, unforeseen conditions arise which result in the approved terms and conditions being inadequate to protect public health and safety or to protect the environment.

6. The holder shall perform all necessary transportation studies and recommend a road standard to meet the purpose of the main access road. This standard and the topography, soils, and geologic hazards of the lands crossed will define the level of survey and design necessary. Accepted standards for road design, including the Bureau of Land Management (BLM) 9113 Manual Section may be used.

7. The holder shall obtain the services of a licensed professional engineer to locate, survey, design, and construct the road as directed by the Authorized Officer. The road design shall be based on the width, maximum grade, and design speed of the road.

8. The holder shall submit to the Authorized Officer prior to commencement of construction, standard or typical cross sections of the road to be constructed, maintained, or reconstructed as directed by the Authorized Officer. The cross sections shall include, but are not limited to, the road width, ditch dimensions, cut and fill slopes, and typical culvert installation.

9. As directed by the Authorized Officer, the completed subgrade shall be submitted to the BLM for approval prior to any surfacing.

10. As directed by the Authorized Officer, surfacing shall be designed to accommodate anticipated loading and traffic volumes and future maintenance.

11. The design and location of all structures, including turbines, transformers, substation, batch plant, roads, and meteorological towers shall be approved by the Authorized Officer prior to construction.

12. All roads, including the main access road from State Highway 81 to the project and the project roads connecting the turbines, shall be constructed and maintained in accordance with the BLM standards found in the 9113 Manual prescribed for a collector-type road.

RESOURCE PROTECTION

1. Any cultural or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on its behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or paleontological values.

The holder will be responsible for the cost of evaluation, and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

2. Use of pesticides shall comply with applicable Federal and state laws. Pesticides shall be used only in accordance with their registered uses and within limitations imposed by the Secretary of the Interior. Prior to the use of pesticides, the holder shall obtain from the Authorized Officer written approval of a plan showing the type and quantity of material to be used, pest(s) to be controlled, method of application, location of storage and disposal of containers, and any other information deemed necessary by the Authorized Officer. The holder shall not make emergency use of pesticides unless approved in writing by the Authorized Officer prior to such use.

3. The holder shall be responsible for weed control on disturbed areas within the limits of the right-of-way. The holder is responsible for consultation with the Authorized Officer or local authorities for acceptable weed control methods.

4. The holder shall prepare a noxious and invasive weed plan as part of the project. The weed plan shall include preconstruction weed inventories and a post construction monitoring plan to prevent and treat the spread of weeds. Construction equipment shall be cleaned and free of weeds prior to coming onto the construction site. The holder shall locate an intermediate wash station midway through the project area to prevent lower elevation weed species from moving up the Cotterel ridgeline. Only certified weed free straw and hay shall be used as mulch or for temporary erosion control measures.

5. The holder shall protect all survey monuments found within the right-of-way. Survey monuments include, but are not limited to, General Land Office and BLM Cadastral Survey Corners, reference corners, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments. In the event of obliteration or disturbance of any of the above, the holder shall immediately report the incident, in writing, to the Authorized Officer and the respective installing authority if known. Where General Land Office or BLM right-of-way monuments or references are obliterated during operations, the holder shall secure the services of a registered land surveyor or a BLM cadastral surveyor to restore the disturbed monuments and references using surveying procedures found in the Manual of Surveying Instructions for the Survey of the Public Lands in the United States, latest edition. The holder shall record such survey in the appropriate county and send a copy to the Authorized Officer. If the BLM cadastral surveyors or other Federal surveyors are used to restore the disturbed survey monument, the holder shall be responsible for the survey cost.

SURVEY AND STAKING

1. The holder shall place slope stakes, culvert location and grade stakes, and other construction control stakes as deemed necessary by the Authorized Officer to ensure construction in accordance with the Plan of Development. If stakes are disturbed, they shall be replaced before proceeding with construction.

2. No surface disturbance or construction activity will be allowed within 100 feet of any cultural sites, which are clearly marked as specified by the Authorized Officer. No deviation from this requirement shall occur unless the holder has the prior written approval of the Authorized Officer.

3. The holder shall set center line stakes to identify the location of the main access road as directed by the Authorized Officer.

4. Cut and fill slope stakes shall be set as directed by the Authorized Officer.

5. The holder shall identify and physically mark the boundaries of all construction work areas (e.g., construction right-of-way, extra work space areas, storage and contractor yards, borrow and disposal areas, access roads, etc.) that would be needed for safe construction. The holder must ensure that appropriate cultural resources and biological surveys have been conducted.

CONSTRUCTION MEASURES

1. Suitable topsoil material removed in conjunction with clearing and stripping shall be conserved in stockpiles within the right-of-way. Topsoil shall be stripped to an average depth of 4-6 inches. If deep soils are available, the holder shall segregate 6-12 inches of topsoil and stockpile accordingly.

2. The holder will rip severely compacted areas to a depth of 12”. In areas where topsoil has been segregated, the holder shall rip the subsoil before replacing the segregated topsoil.

3. Excavation and embankment quantities shall be balanced as nearly as design and construction considerations allow. Any waste and/or borrow needs shall be specifically identified by the holder.

4. Excess excavated and unsuitable materials shall be disposed of as directed by the Authorized Officer.

5. Waste rock from road and turbine pad construction shall be hauled to the rock crushing plant to create material to be used for road surfacing. Excess rock shall be hauled off-site and disposed of at an approved facility.

6. Clearing and grubbing debris shall not be placed or permitted to remain in or under any embankment sections. Clearing and grubbing debris may be placed under waste material with a minimum of 3 feet of cover as directed by the authorizing officer.

7. Earthwork areas shall be cleared of vegetation and the topsoil stockpiled for future rehabilitation. Prior to fill construction, the existing surface shall be sloped to avoid sharp banks and allow equipment operations. No fills shall be made with water saturated soils. Materials shall be placed in uniform layers not to exceed 12 inches in thickness. Construction equipment shall be routed evenly over the entire width of the fill to obtain a thorough compaction.

8. The holder shall remove only the minimum amount of vegetation necessary for the construction of structures and facilities. Topsoil shall be conserved during excavation and reused as cover on disturbed areas to facilitate regrowth of vegetation.

9. No construction or routine maintenance activities shall be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts in excess of six (6) inches deep, the soil shall be deemed too wet to adequately support construction equipment.

10. The holder shall conduct all activities associated with the construction, operation, maintenance, and termination of the right-of-way within the authorized limits of the right-of-way.

11. Construction holes left open over night shall be covered. Covers shall be secured in place and shall be strong enough to prevent livestock or wildlife from falling through and into a hole.

12. All design, material, and construction, operation, maintenance, and termination practices shall be in accordance with safe and proven engineering practices.

13. The holder shall limit excavation to the areas of construction. No borrow areas for fill material will be permitted on the right-of-way. All waste material resulting from construction or use of the site by the holder shall be removed from the right-of-way.

FENCING, CATTLEGUARDS AND CULVERTS

1. Cattleguards shall be 5 feet by 16 feet and at a minimum meet the requirements of BLM Manual Section 9113.25. They shall be set on timber, precast concrete, or cast-in-place concrete bases at right angles to the roadway. Backfill around cattle guards shall be thoroughly compacted. A bypass gate shall be built adjacent to each cattleguard structure. Gate materials, dimensions, and construction shall conform to the requirements specified by the Authorized Officer.

2. Fences, gates, and brace panels shall be reconstructed to appropriate BLM standards or specifications determined by the Authorized Officer.

3. The holder shall furnish and install culverts of the gauge, materials, diameter(s), and length(s) indicated and approved by the Authorized Officer. Culverts shall be free of corrosion, dents, or other deleterious conditions. Culverts shall be placed on channel bottoms on firm, uniform beds which have been shaped to accept them and aligned to minimize erosion. Backfill shall be thoroughly compacted. No equipment shall be routed over a culvert until backfill depth is adequate to protect the culverts.

4. As directed by the Authorized Officer, construction stakes shall be set for each culvert to show location as well as inlet and outlet elevations, diameter, and length.

5. As directed by the Authorized Officer, the holder shall submit a complete culvert list to reflect the drainage plan for the main access road. The list shall include, but not be limited to, size(s), lengths, and locations of the culverts.

6. The minimum diameter for culverts shall be 18 inches.

7. All roads and parking areas shall be constructed to provide drainage and minimize erosion. Culverts shall be installed if necessary to maintain drainage. All areas to be used for roads and parking shall be surfaced with gravel.

8. Culverts and lateral ditches shall be staked for location, skew, and elevation as directed by the Authorized Officer.

ACCESS

1. Specific sites as identified by the Authorized Officer (e.g., archaeological sites, areas with threatened and endangered species, or fragile watersheds) where construction equipment and vehicles shall not be allowed shall be clearly marked on-site by the holder before any construction or surface-disturbing activities begin. The holder shall be responsible for assuring that construction personnel are well trained to recognize these markers and understand the equipment movement restrictions involved.

2. The holder shall provide for the safety of the public entering the right-of-way. This includes, but is not limited to, flagmen/women with communication systems for single-lane roads without turnouts visible from one another, and attended gates for blasting operations.

3. The holder shall permit free and unrestricted public access to and upon the right-of-way for all lawful purposes except for those specific areas designated as restricted by the Authorized Officer to protect the public, wildlife, livestock, or facilities constructed within the right-of-way.

4. Construction-related traffic shall be restricted to routes approved by the Authorized Officer. New access roads or cross-country vehicle travel will not be permitted unless prior written approval is given by the Authorized Officer. Authorized roads used by

the holder shall be rehabilitated or maintained when construction activities are complete as approved by the Authorized Officer.

5. Existing roads and trails on public lands that are blocked as the result of the project shall be rerouted or rebuilt as directed by the Authorized Officer.

6. If 'cross country' access is necessary, clearing vegetation or grading a roadbed will be avoided whenever practicable. All construction and vehicular traffic shall be confined to the right-of-way or designated access routes, roads, or trails unless otherwise authorized in writing by the Authorized Officer. All temporary roads used for construction shall be rehabilitated after construction is completed.

7. The holder shall inform the Authorized Officer within 48 hours of any accidents on BLM or Bureau of Reclamation lands that require reporting to the Department of Transportation as required by 49 CFR Part 195.

8. The holder shall plan for safe and accessible conditions at all roadway crossings and access points during construction and restoration.

POWERLINE CONSTRUCTION

1. Unless otherwise agreed to by the Authorized Officer in writing, power lines shall be constructed in accordance with standards outlined in *"Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996"* by the Avian Power Line Interaction Committee (APLIC), Edison Electric Institute and the Raptor Research Foundation, 1996 in Washington, D.C. The holder shall assume the burden and expense of proving that pole designs not shown in the above publication are "eagle safe". Such proof shall be provided by a raptor expert approved by the Authorized Officer.

2. The holder shall use nonreflecting lines and conductors.

3. The holder shall evenly spread excess soil excavated from pole holes within the right-of-way and in the immediate vicinity of the pole structure.

4. The holder shall use bird deflectors or other appropriate marking devices on the transmission interconnect lines where they cross the Snake River. The holder shall also install raptor perch prevention devices on all above-ground power transmission poles.

ENVIRONMENTAL COLORATION

1. The holder shall coordinate with the Authorized Officer on the design and color of the towers, blades, poles, and transmission lines to achieve the minimum practicable visual impacts.

2. All above-ground structures not subject to safety requirements or other painting requirements specified by the Authorized Officer shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee.

EARTHWORK AND EROSION CONTROL

1. The holder shall recontour all disturbed areas, or designated sections of the right-of-way, by grading to restore the site to approximately the original contour of the ground as determined by the Authorized Officer.

2. The holder shall recontour disturbed areas and obliterate all earth work by removing embankments, backfilling excavations, and grading to re-establish the approximate original contours of the land in the right-of-way.

3. The holder shall uniformly spread topsoil over all unoccupied disturbed areas. Spreading shall not be done when the ground or topsoil is frozen or wet.

4. The holder shall construct water bars on all disturbed areas to the spacing and cross sections specified by the Authorized Officer. Water bars are to be constructed to: (1) simulate the imaginary contour lines of the slope (ideally with a grade of one or two percent); (2) drain away from the disturbed area; and (3) begin and end in vegetation or rock whenever possible.

5. As directed by the authorizing officer, all road segments shall be winterized by providing a well-drained roadway. This may be achieved by water barring, maintaining drainage, and any additional measures necessary to minimize erosion and other damage to the roadway or the surrounding public lands.

6. Temporary erosion and sediment control devices, including slope breakers and sediment barriers, will be installed promptly after soil disturbance. These devices will be inspected on a daily basis in areas of active construction; on a weekly basis in areas with no active construction; and within 24 hours of each 0.5-inch or greater rainfall. Temporary slope breakers (*e.g.*, hay bales, silt fence, earthen berms) will be constructed and maintained according to the specifications and recommendations of the BLM. The holder will install temporary sediment barriers, such as silt fence or staked straw bales, on either side of a water body channel across the width of the construction right-of-way; around spoil and topsoil stockpiles; and at the edge of the right-of-way to contain topsoil or spoil material and the flow of sediment into adjacent areas. Sediment barriers will be maintained as necessary to ensure effectiveness during construction. In steep terrain, temporary sediment barriers will be installed during clearing to prevent the movement of disturbed soil off the right-of-way. Temporary slope breakers consisting of mounded and compacted soil will be installed across the right-of-way during grading.

7. Surface water quality shall be protected from impacts of construction with sediment barriers that shall be maintained until satisfactory reclamation is established.

SEEDING AND MULCHING

1. The holder shall prepare a seedbed by scarifying the disturbed area, distributing topsoil uniformly, or by disking the topsoil as directed by the Authorized Officer.

2. The holder shall seed all disturbed areas with the seed mixture(s) listed below. The seed mixture(s) shall be planted in the amounts specified by the Authorized Officer in pounds of pure live seed (PLS)/acre.

   There shall be no primary or secondary noxious weed seed in the seed mixture. Seed shall be tested and the viability testing of seed shall be done in accordance with State law(s) and within 6 months prior to purchase. Commercial seed shall be either certified or registered seed. The seed mixture container shall be tagged in accordance with State law(s) and available for inspection by the Authorized Officer. Seed shall be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture shall be evenly and uniformly planted over the disturbed area. (Smaller/heavier seeds have a tendency to drop to the bottom of the drill and are planted first. The holder shall take appropriate measures to ensure this does not occur.) Where drilling is not possible, seed shall be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre noted below are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth will not be made before completion of the 2nd season after seeding. The Authorized Officer is to be notified a minimum of 14 days prior to seeding of the project.

   The seed mixture shall be approved by the Authorized Officer as follows:

   a. Species of Seed Variety Pounds/acre PLS of: three types of blue bunch wheatgrass (goldar, secar and anatone) at 2 lbs/acre each, prairie june grass at 1 lb/acre, mountain big sagebrush 1 lb/acre, and low sagebrush 1 lb/acre.

   b. Total of 10-12 lbs/acre PLS.

   c. Pure Live Seed (PLS) formula: % of purity of seed mixture times % germination of seed mixture = portion of seed mixture that is PLS.

3. The holder will apply clean, weed-free straw mulch to all disturbed areas. Mulch will be applied concurrent with or immediately after seeding, where necessary to stabilize the soil surface and to reduce wind and water erosion. Mulch will be uniformly spread over at least 75 percent of the ground surface in disturbed areas to minimize the effects of water and wind erosion and to preserve moisture in areas requiring vegetation. Mulch will be anchored by disking or punching, depending on the slope.

FIRE PROTECTION

1. The holder shall prepare a fire prevention and suppression plan, which shall be reviewed, modified, and approved, as appropriate, by the Authorized Officer. The holder shall take into account such measures for prevention and suppression of fire on the right-of-way and other public land used or traversed by the holder in connection with operations on the right-of-way. Project personnel shall be instructed as to individual responsibility in implementation of the plan.

2. During construction, operation, maintenance, and termination of the right-of-way during the period from July 1 to Sept. 15, vehicles, gas-powered equipment, and flues shall be equipped with spark arresters approved by the Authorized Officer.

3. When requested by the Authorized Officer, the holder shall make its equipment, already at the site with operators, temporarily available for fighting fires in the vicinity of the project. Payment for such services will be made at rates determined by the Authorized Officer.

LIABILITY AND BONDING

1. The holder shall be liable for damage or injury to the United States to the extent provided by applicable regulations (43 CFR 2807.12). The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from fire or soil movement (including landslides and slumps as well as wind and water-caused movement of particles) caused or substantially aggravated by any of the following within the right-of-way:

   (1) Activities of the holder, including but not limited to, construction, operation, maintenance, and termination of the project.

   Activities of other parties including but not limited to:

   a. Land clearing and logging.
   b. Earth-disturbing and earth-moving work.
   c. Blasting.
   d. Vandalism and sabotage.

   The maximum limitation for such strict liability damages shall not exceed ($2,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred. This section shall not impose strict liability for damage or injury resulting primarily from the negligent acts or omissions of the United States.

2. The holder shall be responsible for repairing/replacing any resources lost by grazing permittees or the United States as a result of the project. Resources may include, but not be limited to, stock water pipelines, livestock, forage for livestock grazing (except

for permanent project roads), spring (water) production, and the ability to graze livestock. Any lost resources shall be repaired, replaced in kind, or compensated for by mutual agreement.

3. A bond, acceptable to the Authorized Officer, shall be furnished by the holder prior to the issuance of a notice to proceed or at such earlier date as may be specified by the Authorized Officer. The amount of this bond shall be determined by the Authorized Officer. This bond must be maintained in effect until removal of improvements and restoration of the right-of-way have been accepted by the Authorized Officer.

4. Should the bond delivered under this grant become unsatisfactory to the Authorized Officer, the holder shall, within 30 days of demand, furnish a new bond.

ROAD AND CONSTRUCTION SITE MAINTENANCE

1. If snow removal from the main access road is undertaken, equipment used for snow removal operations shall be equipped with shoes to keep the blade two (2) inches off the road surface. The holder shall take special precautions where the surface of the ground is uneven and at drainage crossings to ensure that equipment blades do not destroy vegetation.

2. The holder shall maintain the right-of-way in a safe, usable condition, as directed by the Authorized Officer. A regular maintenance program shall include, but is not limited to, blading, ditching, culvert installation, and surfacing.

3. Except rights-of-way expressly authorizing a road after construction of the project is completed, the holder shall not use the right-of-way as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder.

4. Construction sites shall be maintained in a sanitary condition at all times; waste materials at those sites shall be disposed of promptly at an appropriate waste disposal site. 'Waste' means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.

5. For the purpose of determining joint maintenance responsibilities, the holder shall make road use plans known to all other authorized users of the main access road. The holder shall provide the Authorized Officer, within 30 days from the date of the grant, with the names and addresses of all parties notified, dates of notification, and method of notification. Failure of the holder to share proportionate maintenance costs on the common use access road in dollars, equipment, materials, or manpower with other authorized users may be grounds to terminate the right-of-way grant. The determination as to whether this has occurred and the decision to terminate shall rest with the Authorized Officer acting in compliance with applicable regulations (43 CFR 2807.17 through 2807.19) Upon request, the Authorized Officer shall be provided with copies of any maintenance agreement entered into.

HAZARDOUS MATERIALS

1. The holder shall comply with all applicable Federal, State, and local laws and regulations, existing or hereafter enacted or promulgated, with regard to any hazardous materials, as defined in this paragraph, that will be used, produced, transported, or stored on or within the right-of-way or any of the right-of-way facilities, or used in the construction, operation, maintenance, or termination of the right-of-way or any of its facilities. "Hazardous material" means any substance, or material defined as hazardous, a pollutant, or contaminant under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, 42 U.S.C. 9601 et seq., and its regulations See 43 CFR 2801.5. The definition of "hazardous substance" under CERCLA includes any "hazardous waste" as defined in the Resource Conservation and Recovery Act (RCRA) of 1976, as amended, 42 U.S.C. 6901 et seq. and its regulations. The term "hazardous material" also includes oil, regulated substances contained in or released from underground storage tanks, or other substances that applicable law define and regulate as hazardous and any nuclear or byproduct material as defined by the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011 et seq. The term "hazardous substance" does not include petroleum, including crude oil or any fraction thereof that is not otherwise specifically listed or designated as a hazardous substance under CERCLA section 101(14), 42 U.S.C. 9601(14), nor does the term include natural gas.

2. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous material (as these terms are defined in the CERCLA. or the RCRA) on the right-of-way unless the release or threatened release is wholly unrelated to the right-of-way holder's activity on the right-of-way. This applies without regard to whether the release is caused by the holder, its agent, or unrelated third parties.

3. The holder shall submit a contingency plan for hazardous materials to the Authorized Officer prior to scheduled start up. The plan will:

    a. Include provisions for the control of oil spills or spills of other pollutants;

    b. Provide that agencies responsible for contingency plans in southern Idaho shall be among the first to be notified in the event of any transformer failure resulting in a spill of oil or other pollutant;

    c. Provide for restoration of the affected resource;

    d. Provide that the Authorized Officer shall approve any materials or devices used for oil spill control and any disposal sites or techniques selected to handle oil, matter, or other pollutants; and

    e. Include separate and specific techniques and schedules for cleanup of spills of oil or other pollutants on land or waters.

4. The holder shall not refuel any equipment within 500 feet of any live water source.

AIR QUALITY

1. The holder shall meet Federal, State, and local emission standards for air quality and shall submit for the Authorized Officer's review a technical report addressing criteria and methodology of how the Cotterel Wind Power Project will be located and designed to meet said standards.

2. The holder shall furnish and apply water or other means satisfactory to the Authorized Officer for dust control.

3. The holder will be responsible for controlling dust by reducing travel speed and/or applying dust suppressants (e.g., magnesium chloride or other agency-approved materials). Dust will be considered a nuisance/hazard when a visible plume of dust extends more than 300 feet from the source and an estimated opacity exceeding 20 percent (objects partially obscured). Additional methods of dust control that may be used by the holder include, but are not limited to:

    a. Application of water or magnesium chloride to access roads or sections of the right-of-way as needed to suppress dust;

    b. Application of water to specific activities on the right-of-way that generate dust plumes (e.g., trenching or blasting);

    c. Curtailing of dust-generating activities during high winds;

    d. Implementation of mandatory speed limits on vehicles using access roads or traveling the right-of-way; and

    e. Limitation of number of vehicles allowed on the right-of-way.

BLASTING

1. The holder shall conduct pre- and post-blasting surveys of springs within 500 feet of the blast site. Ground vibrations shall be monitored at the blast site and at these spring locations. If springs are damaged, the holder shall replace a like amount of lost water or otherwise compensate the owner.

2. The holder shall limit blasting to the hours of 8 am to 5 pm Monday through Friday and shall limit heavy truck traffic through communities to the same hours.

CIVIL RIGHTS

The holder or the holder's successor in interest shall comply with Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d *et seq*.) and the regulations of the Secretary of the Interior issued pursuant thereto.

RIGHT-OF-WAY TERMINATION

Ninety days prior to termination of the right-of-way, the holder shall contact the Authorized Officer to arrange a joint inspection of the right-of-way. This inspection will be held to agree to an acceptable termination and rehabilitation plan. This plan shall include, but is not limited to, removal of facilities, drainage structures, or surface material, recontouring, topsoiling, or seeding. A plan approved in writing by the Authorized Officer must be in place prior to the holder's commencement of any termination activities.

RESPONSIBILITIES OF ENVIRONMENTAL INSPECTOR(S)

The holder shall institute an environmental inspection program that shall be responsible for:

1. Ensuring compliance with the requirements of the Plan of Development and the Environmental Protection Measures of the right-of-way grant authorization and the mitigation measures proposed by the holder (and approved or modified by the right-of-way grant), other environmental permits and approvals;

2. Identifying, documenting, and overseeing corrective actions, as necessary to bring an activity back into compliance;

3. Verifying that the limits of all authorized construction work areas and locations of access roads are properly marked before clearing;

4. Verifying the location of signs and highly visible flagging marking the boundaries of sensitive resource areas, drainages, water bodies, or areas with special requirements along the construction work area;

5. Identifying erosion/sediment control and soil stabilization needs in all areas;

6. Ensuring that the location of dewatering structures and slope breakers will not direct water into known cultural resources sites or locations of sensitive species;

7. Verifying that trench dewatering activities do not result in the deposition of sand, silt, and/or sediment near the point of discharge into a drainage or water body. If such deposition is occurring, the dewatering activity shall be stopped and the design of the discharge shall be changed to prevent reoccurrence;

8. Ensuring that subsoil and topsoil are tested in areas to measure compaction and determine the need for corrective action;

9. Advising the Construction Contractor when conditions (such as wet weather) make it advisable to restrict construction activities to avoid excessive rutting;

10. Ensuring restoration of contours and replacement of topsoil;

11. Verifying that any soils or materials imported for use have been certified as free of noxious weeds;

12. Determining the need for and ensuring that erosion controls are properly installed, as necessary to prevent sediment flow into drainages, water bodies, sensitive areas, and onto roads;

13. Inspecting and ensuring the maintenance of temporary erosion control measures at least:

    a. on a daily basis in areas of active construction or equipment operation;
    b. on a weekly basis in areas with no construction or equipment operation; and
    c. within 24 hours of each 0.5 inch of rainfall;

14. Ensuring the repair of all ineffective temporary erosion control measures within 24 hours of identification;

15. Keeping records of compliance with the environmental conditions of the right-of-way grant, and the mitigation measures proposed by the holder in the application submitted to the BLM; and

16. Identifying areas that should be given special attention to ensure stabilization and restoration after the construction phase.

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Exhibit A
Legal Descriptions

IDI-33676

EXHIBIT "A"

COTTEREL WIND POWER PROJECT LEGAL DESCRIPTION

MAIN ACCESS ROADS:

T. 10 S., R. 25 E., B.M., Cassia Co., ID
Sec. 23: SW¼NE¼, W½SE,
25: S½SW¼,
26: W½NE¼, N½SE¼, SE¼SE¼, NE¼SW¼, SE¼NW¼.

T. 11 S., R. 25 E., B.M., Cassia Co., ID
Sec. 1: Lots 1, 2, S½NE¼, NE¼SE¼.

T. 12 S., R. 26 E.
Sec. 30: S½SE¼, E½SW¼, SW¼NW¼.

POWER TRANSMISSION LINE:

T. 8 S., R. 25 E., B.M., Cassia Co., ID
Sec. 35: S½SE¼.

T. 9 S., R. 25 E.
Sec. 2: Lots 1A, 1B, 5, 9A,
11: E½SE,
12: SW¼SW¼,
13: W½W½,
14: NE¼NE¼,
24: W½W½,
25: W½W½.

T. 11 S., R. 25 E.
Sec. 25: SE¼SE¼.

T. 11 S., R. 26 E.
Sec. 4: SW¼SW¼,
5: SE¼NE¼, E½SE¼,
9: W½SE¼, E½NW¼, NW¼NW¼,
17: N½NE¼,
30: S½SW¼.

WIND TURBINE PROJECT SITE:

T. 10 S., R. 26 E., B.M., Cassia Co., ID
Sec. 31: W½W½.

T. 11 S., R. 25 E.
Sec. 1: Lots 1, 2, S½NE¼, NE¼SE¼,
13: E½E½, SW¼NE¼, W½SE¼,
24: E½,
25: E½.

T. 11 S., R. 26 E.
Sec. 6: Lots 5, 6, 7, S½SE¼, E½SW¼, SE¼NW¼,
7: All,
18: Lots 1, 2, 3, 4, W½NE¼, NW¼SE¼, NE¼SW¼, E½NW¼,
19: Lot 1, NE¼NW¼,
30: Lots 2, 3, 4, E½SW¼, SE¼NW¼,
31: Lots 1, 2, 3, 4, E½W½, SW¼NE¼, W½SE¼.

T. 12 S., R. 25 E.
Sec. 1: Lots 1, 2, S½NE¼, SE¼,
12: E½E½,
13: E½,
24: E½.

T. 12 S., R. 26 E.
Sec. 6: Lots 2,3,4,5,6,7, SW¼NE¼,W½SE¼,E½SW¼,SW¼NW¼,
7: Lots 1,2,3,4, E½W½,W½E½,
18: Lots 1, 2, 3, 4, E½W½, W½E½,
19: W½,
29: W½W½,
30: E½, E½SW¼,
31: Lots 2, 3, 4, E½W½, NE¼, NW¼SE¼,
32: W½NW¼.

T. 13 S., R. 25 E.
Sec. 1: Lot 1, SE¼NE¼, E½SE¼.

T. 13 S., R. 26 E.
Sec. 6: Lots 2, 3, 4, 5, 6, 7, SW¼NE¼, W½SE¼, E½SW¼, SW¼NW¼,
7: Lot 1, N½NE¼, NE¼NW¼.

Exhibit B
Location Map

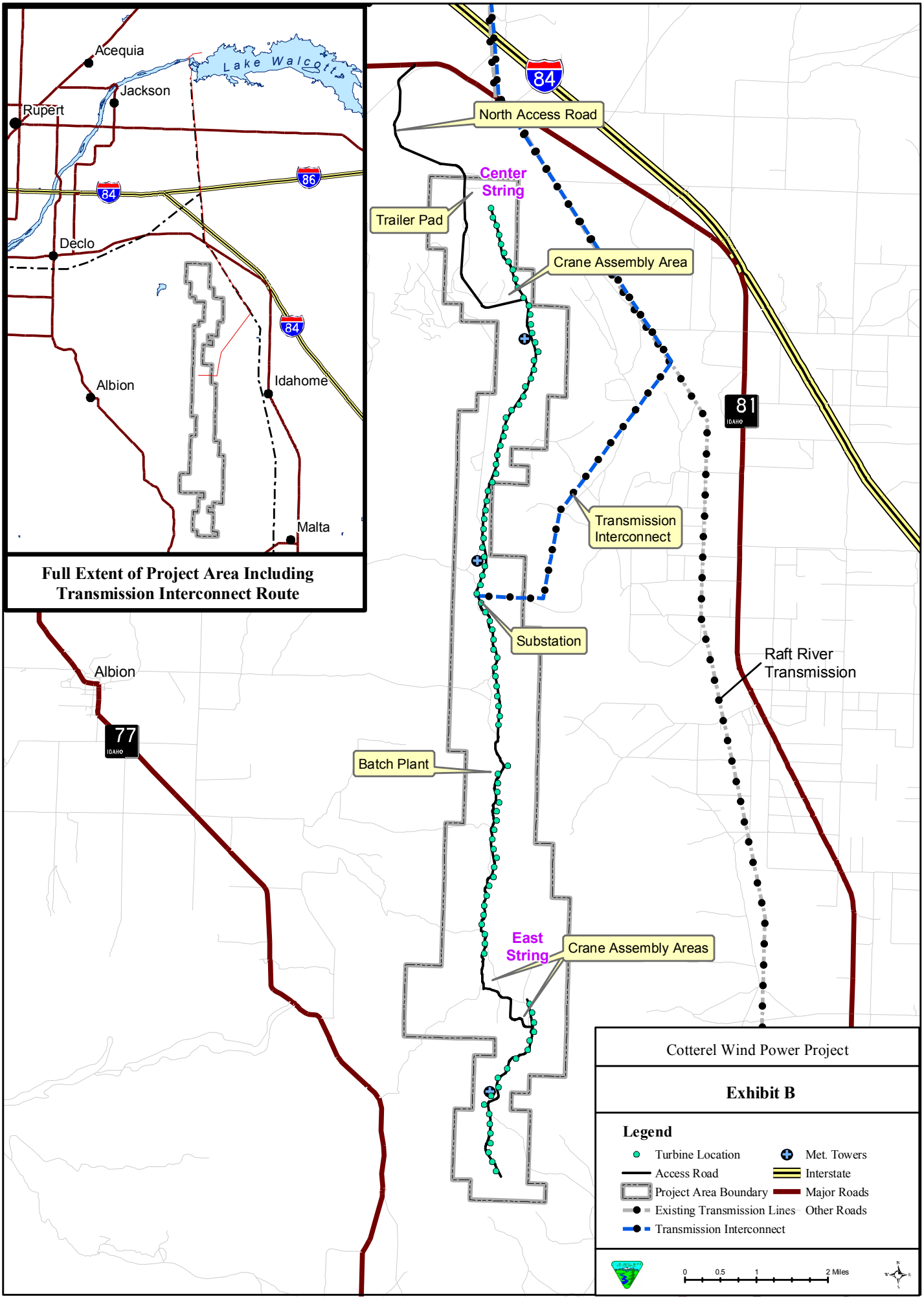
Acequia
Lake Walcott
Jackson
Rupert
84
86
Declo
84
Albion
Idahome
Malta
Full Extent of Project Area Including
Transmission Interconnect Route
84
North Access Road
Center
String
Trailer Pad
Crane Assembly Area
81
IDAHO
Transmission
Interconnect
Substation
Raft River
Transmission
Albion
77
IDAHO
Batch Plant
East
String
Crane Assembly Areas
Cotterel Wind Power Project
Exhibit B
Legend
Turbine Location
Met. Towers
Access Road
Interstate
Project Area Boundary
Major Roads
Existing Transmission Lines
Other Roads
Transmission Interconnect
0
0.5
1
2 Miles

Exhibit C
Cotterel Wind Project & Transmission Line Map

INSERT FILE: **Exhibit C Map.pdf** here

EXHIBIT C – COTTEREL WIND POWER PROJECT AND TRANSMISSION LINE

11 X 17 MAP

Exhibit D
Project Site Maps

EXHIBIT D – PROJECT SITE MAPS

Draft Cotterel ROW Exhibit D are the Black and Veatch Maps.

There are 20 - 11 X 17 maps to insert here.

They are file: **Exibit D Maps.pdf**

They go in the following order:

143755-DS-0010.pdf
PROP1-143755-DS-0011-J05.pdf
PROP1-143755-DS-0012-J05.pdf
PROP1-143755-DS-0013-J05.pdf
PROP1-143755-DS-0014-J05.pdf
PROP1-143755-DS-0015-J05.pdf
PROP1-143755-DS-0016-J05.pdf
PROP1-143755-DS-0017-J05.pdf
PROP1-143755-DS-0018-J05.pdf
PROP1-143755-DS-0019-J05.pdf
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PROP1-143755-DS-0028-J05.pdf
PROP1-143755-DS-0029-J05.pdf