China Mountain Wind Power Project
Preliminary
Plan of Development

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EXECUTIVE SUMMARY

This document is the Plan of Development (POD) for the proposed China Mountain Wind Power Project (Project). The proposed Project will be located on private land, Idaho state land, and public land that is administered by the Bureau of Land Management (BLM), United States (U.S.) Department of the Interior in both Idaho and Nevada. As such, this plan is a required component of the BLM right-of-way (ROW) grant and Idaho Department of Lands (IDL) lease for the Project.

The POD is a required component of a BLM Right-of-Way (ROW) grant application form SF-299 and describes how the Project will be built, operated, and decommissioned in a manner consistent with the requirements of the BLM. The POD is a living document and will continue to be refined during the BLM evaluation of the application, including the National Environmental Policy Act (NEPA) evaluation process, and will be finalized for inclusion as part of the ROW grant. The POD is organized into four main sections:

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

Section 1 provides basic information on wind energy projects in general, and the proposed China Mountain 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 2, 3, and 4 describe activities performed in the three phases of the Project: construction, operation, and decommissioning.

This POD will become part of the BLM Record of Decision (ROD) and ROW grant. RES America Developments (RES) 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.

1.0 PROJECT DESIGN

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

1.1 DESCRIPTION OF PROJECT

RES is proposing to develop an approximately 425 megawatt (MW) wind energy facility, consisting of up to 170, 2.3 to 3.0-MW wind turbine generators. The brand (manufacture) of wind turbine generator that is planned to be used on the Project has not been determined at this time. When the project proceeds to the point where it is appropriate for RES to order the wind turbine generators, a particular brand, model and megawatt capacity will be selected. The selection will be based on the model that best meets the site specific wind speeds and patterns at China Mountain, can be manufactured and delivered to meet the Project construction schedule and is the most cost effective to the applicant. The proposed Project will not exceed 425 MW of generating capacity.

The turbines would be generally arranged on north–south trending ridgelines in south-central Idaho and northeast Nevada. The proposed site surrounds China Mountain, located southwest of Rogerson, Idaho, and west of the town of Jackpot, Nevada (Figure 1-1). It is also west of Browns Bench and the Salmon Falls Creek Reservoir and State Highway 93, respectively. The legal descriptions are listed in Table 1-1. Collectively, these sections encompass the proposed Project area, in which is included all of the proposed Project facilities as well as some open space. The proposed right-of-way encompasses approximately 4,677 acres on BLM land in Nevada and 25,302 acres on a mix of private, state, and BLM lands in Idaho. The actual foot print of the developed project would be substantially smaller in area (Please see Tables 1.2 – 1.6 below).

As proposed, the Project would include the siting of up to 170 wind turbine generators, the construction or reconstruction of 63 miles of all weather gravel roads and the construction of up to 15 miles of transmission interconnect lines. Figure 1-2 shows the general areas where the wind turbines will be located, the proposed road and collection system layout, and possible transmission line routes as proposed at this time. The exact location of the wind turbines, roads, and transmission interconnect line(s) will be finalized once wind resource data analyses have been completed, Project area construction constraints determined (refined contour data and soils analysis), and the BLM identifies the location of sensitive cultural, Tribal or environmental resources, if any, to be avoided.

Table 1-1. Townships, Ranges and Sections in the Proposed Right-of-Way Area.

State	Township/Range	Sections
ID	T14S R14E	26, 27, 34, 35
ID	T15S R13E	24, 35, 36
ID	T15S R14E	3, 4, 7, 8, 9, 10, 15, 16, 17, 18, 19, 20, 21, 22, 28, 29, 30, 31, 32
ID	T16S R13E	1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24, 25
ID	T16S R14E	5, 6, 7, 8, 17, 18, 19, 20, 30
NV	T47N R63E	4, 5, 8, 9, 10, 15, 16, 17

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 1-3 is a general schematic of typical wind turbines (Figure 1-3 is from *How Wind Turbines Work*, U.S. Department of Energy, 2004).

The wind turbines will be placed in locations that minimize environmental impacts but that maximize the energy production without sacrificing safety in construction, operations, or maintenance activities. Section 2 provides additional detail on the components of the Project as well as on the site layout. The Project will include monitoring during its construction, operation, and decommissioning, according to the requirements of the ROW grant.

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(s) will be built on BLM land at the north end of the Project. More information on each major Project component is provided in Section 2.2.

Electricity generated from the Project is planned to be delivered to utilities in both Idaho and Nevada. The Project is planned to interconnect with the existing Idaho Power 138 kV and Sierra Pacific Power 345 kV transmission lines located to the east of Salmon Falls Creek. The Project would require a 3-phase overhead transmission line from each of two planned substations to the point of interconnection with these transmission lines.

Figure 1-1.
Vicinity Map

RES North America
China Mountain Wind Power Project

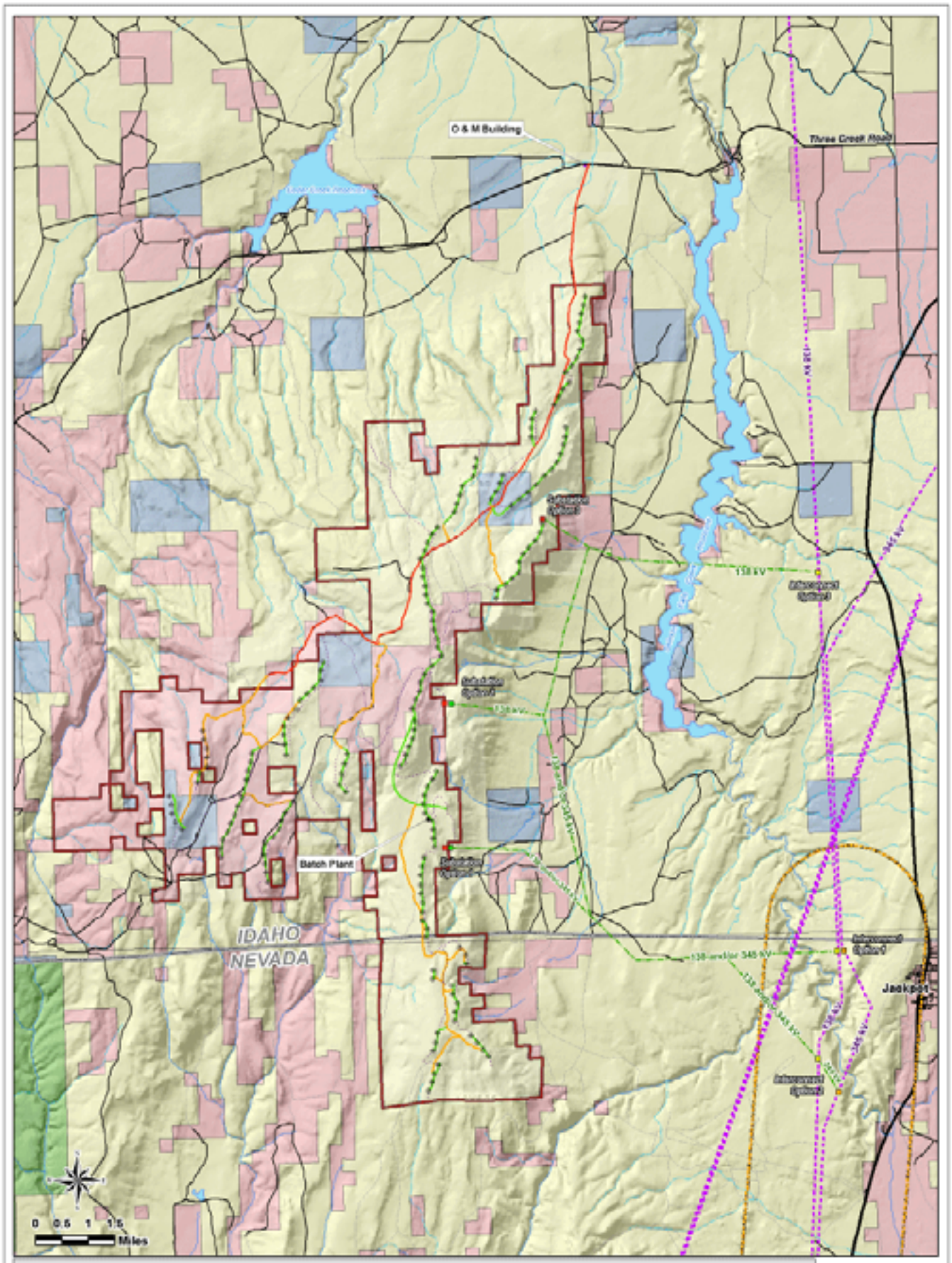

Figure 1-2.
Site Plan
RES North America
China Mountain
Wind Power Project

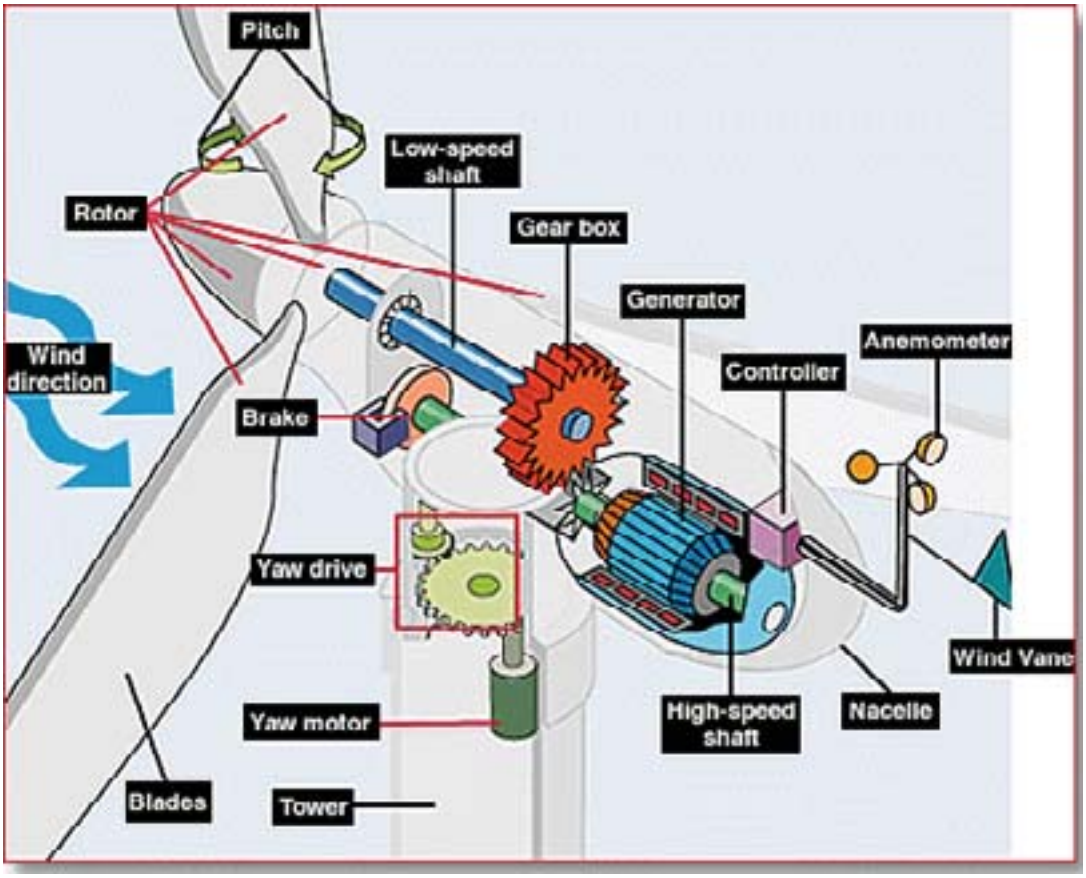

Figure 1-3. General Wind Turbine Nacelle Components (U.S. DOE).

Tables 1-2 through 1-6 list the estimated temporary and permanent acreages of ground disturbance as a result of Project construction. It is estimated that Project construction will disturb approximately 447-542 acres on a temporary basis and 198-197 acres on a permanent basis. The acres of estimated ground disturbance will be refined following completion of wind resource data analyses, determination of Project area construction constraints (refined contour data and soils analysis), and as the BLM identifies the location of sensitive environmental areas, if any, to be avoided.

Table 1-2. Estimated Disturbance Acreage from Wind Turbine Generators.

Turbine Count by State and Ownership			Disturbance in acres	
State	Surface Ownership	Number of Turbines	Temporary Disturbance	Permanent Disturbance
Idaho	BLM	94	72	14
Idaho	Private	39	30	6
Idaho	State	15	11	2
Nevada	BLM	22	17	3
	Totals	**170**	**130**	**26**

Table 1-3. Estimated Disturbance Acreage from Wind Farm Facilities.

Other Wind Resource Area Features				Disturbance in acres		
State	Surface Ownership	Feature	Number of Features	Temporary Disturbance	Permanent Disturbance per Single Feature	Permanent Disturbance for All Features
Idaho	BLM	O&M	1	---	2	2
Idaho	BLM	Batch Plant	1	2	-	---
Idaho	BLM	Laydown Yard	5	20*	-	---
Idaho	BLM	Substations	2	---	2	4
Nevada	BLM	Interconnect	2	---	2	4
			Totals	**22**	**6**	**10**

*Impact calculation assumes 5 laydown areas at 3 acres each with the potential for 5 additional 1 acre staging areas.

Table 1-4. Estimated Disturbance Acreage from Roads and Underground Collection System.

Current and Projected Road Widths and Lengths by State, Owner, and Road Class.							Disturbance in acres	
State	Surface Ownership	Condition	Current Width (ft)	Temporary Width (ft)	Permanent Width (ft)	Length (mi)	Temporary Disturbance	Permanent Disturbance
Idaho	BLM	Existing 2 Track – Upgrade	10	30	20	5.87	21	14
Idaho	BLM	Existing Haul Road – Upgrade	16	30	20	10.35	38	25
Idaho	BLM	New Road	0	30	20	17.84	65	43
Idaho	Private	Existing 2 Track – Upgrade	10	30	20	7.58	28	18
Idaho	Private	Existing Haul Road – Upgrade	16	30	20	1.86	7	5
Idaho	Private	New Road	0	30	20	6.68	24	16
Idaho	State	Existing 2 Track – Upgrade	10	30	20	1.04	4	3
Idaho	State	Existing Haul Road – Upgrade	16	30	20	1.44	5	3
Idaho	State	New Road	0	30	20	2.73	10	7
Nevada	BLM	Existing 2 Track – Upgrade	10	30	20	5	18	12
Nevada	BLM	New Road	0	30	20	2.72	10	7
					Totals	**63.11**	**229**	**153**

Calculations account for underground collection system, which is entrenched in road beds.

Table 1-5. Estimated Disturbance Acreage Associated with Transmission Line Options.

Project Transmission Lines: Permanent impacts assume an average span of 500 feet between poles. Length of maintained ROW accounts for distance to descend into Browns Bench									**Disturbance in acres**	
Phase	**Option**	**State**	**Surface Ownership**	**Length of ROW (mi)**	**Temporary ROW Width (ft)**	**Width of ROW to be Maintained (ft)**	**Number of Poles**	**Permanent Disturbance per Pole (ft^2)**	**Temporary Disturbance**	**Permanent Disturbance**
1: 345 kV	Preferred: Sub 1 to Int 1	ID	BLM	2.56	100	75	27	9	31	7
		ID	Private	1.09	100	---	12	9	13	0
		NV	BLM	4.65	100	---	49	9	56	0
								Totals	**100**	**7**
1: 345 kV	Alternative: Sub 1 to Int 2	ID	BLM	2.56	100	75	27	9	31	7
		ID	Private	1.09	100	---	12	9	13	0.
		NV	BLM	5.77	100	---	61	9	70	0.
								Totals	**114**	**7**
2: 138 kV	Preferred: Sub 2 to Int 1	ID	BLM	5.13	100	75	54	9	62	12
		ID	Private	1.02	100	---	11	9	12	0
		NV	BLM	4.52	100	---	48	9	55	0
								Totals	**129**	**12**
2: 138 kV	Alternative 1: Sub 3 to Int 3	ID	BLM	4.01	100	75	42	9	49	3
		ID	Private	1.44	100	75	15	9	17	5.
								Totals	**66**	**8.**
2: 138 kV	Alternative 2: Sub 3 to Int 1	ID	BLM	6.98	100	75	74	9	85	3
		ID	Private	1.70	100	75	18	9	21	5
		NV	BLM	4.52	100	---	48	9	55	0
								Totals	**161**	**8**

Table 1-6. Summary of Estimated Acres of Ground Disturbance for All Project Features.

Project Feature	Temporary Impacts	Permanent Impacts
Wind Turbine Generators	130	26
Facilities	22	10
Roads and Underground Collection System	229	153
Transmission Interconnect Lines and Substatations (depending upon route selected)	66-160	7-12
Total	**447-541**	**196-201**

1.2 NEPA ANALYSIS

NEPA analysis will be prepared for the proposed Project based on information within this POD for the ROW grant application and in compliance with NEPA, its implementing regulations and Instruction Memorandum No. 2006-216. The POD is a living document, will continue to be refined during the BLM evaluation of the application, including the NEPA process, and will be finalized for inclusion as part of the ROW grant.

The potential issues to be addressed in the NEPA analysis may include but would not be limited to:

- 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

The NEPA analysis will address the base reference for details on the environmental aspects of the site, and the studies done in preparation of the Project. This POD will use the results from the NEPA analysis and best industry practices to plan the construction, operation, and decommissioning activities for the Project.

1.2.1 Existing Environmental Information

In support of the preparation of this POD, RES conducted background research into potential sensitive environmental resources present within the Project area. This information was primarily obtained from agency data files including the BLM Elko, Nevada Field Office, Jarbidge, Idaho Field Office, Idaho Department of Fish and Game Conservation Data Center (CDC) records and the U.S. Fish and Wildlife Service. This information was used to determine which sensitive resources could potentially be affected from this Project and apply general mitigation measures and monitoring scenarios.

In support of the NEPA analysis that will be completed for this Project, detailed site specific resource studies and inventories will be conducted. The results of these site specific studies and inventories will be used to assess the potential impacts of the proposed Project, determine appropriate mitigation, and develop monitoring protocols to support adaptive management. As this site specific information becomes available it will be incorporated into this POD.

Threatened and Endangered Vertebrate Species

The USFWS provided a response letter indicating that seven federally listed threatened or endangered species occur within Twin Falls County, Idaho. Of the seven federally listed species, three are snails [Snake River physa snail (*Physa natricina*), Bliss Rapids snail (*Taylorconcha serpenticola*), and Utah valvata (*Valvata utahensis*)] that are commonly associated with rivers. These species are unlikely within the Project area but may occur near Salmon Falls Creek Reservoir. Likewise, the bull trout (*Salvelinus confluentus*) is primarily limited to the Jarbidge River and associated tributaries, which is located west of the Project area. These species do not occur within the upland, dry habitats of the Project area and are not included in the analysis because downstream impacts to sensitive fish and snail habitat from the construction of the Project are not expected. The gray wolf (*Canis lupus*) is an experimental/non-essential population and most likely does not occur within the county. Bald eagles (*Haliaeetus leucocephalus*) may migrate through or winter in the vicinity of the Project area. Bald eagles are closely associated with large water bodies, such as Salmon Falls Creek Reservoir. Finally, documented occurrences of the candidate listed Columbia spotted frog (*Rana luteiventris*) have been made within the Project area. However, this species is closely associated with streams and wet areas. Within the Project area, streams and wet areas are confined to draws and ravines, which most likely will not be affected by project development. Wind turbine arrays will be located on ridgelines in upland sage-shrub habitat where suitable spotted frog habitat is not found. Impacts to drainages from associated access roads will be kept to a minimum as access will remain on existing roads or follow ridgelines where spotted frog habitat is not present.

In consultation with the USFWS, the Elko/Wells Final Resource Management Plan indicates eight threatened and endangered species occur in Elko County Nevada (BLM 2003). Four fish species [Lahontan cutthroat trout (*Oncorhynchus clarki henshawi*), Independence Valley speckled dace (*Rhinichthys osculus lethoporus*), Clover Valley speckled dace (*Rhinichthys osculus oligoporus*), and bull trout] are known to occur in Elko County. These species are unlikely within the Project area but may occur near Salmon Falls Creek Reservoir. Three avian species: mountain plover (*Charadrius montanus*), bald eagle, western yellow-billed cuckoo (*Coccyzus americanus*) are known to occur in Elko County. The Project area is located outside of the breeding range of mountain plovers and individuals are thought to become scarce outside of their breeding range. Western yellow-billed cuckoos are associated with open woodland with clearings and thick, scrubby undergrowth along watercourses. This habitat type does not occur in the Project area. The Columbia spotted frog is also listed as possibly occurring in Elko County. Populations are located within surrounding watersheds, including the Idaho portion of the Project area (see above); however the construction of the Project is not anticipated to impact drainages.

State Sensitive Vertebrate Species

Sensitive species that are known to occur within and nearby the Project area, as indicated by CDC and Nevada BLM are pallid bat (*Antrozous pallidus*), Yuma myotis (*Myotis yumanensis*), western pipistrelle (*Pipistrellus hesperus*), golden eagle (*Aquila chysaetos*), greater sage-grouse (*Centrocercus urophasianus*), long-billed curlew (*Numenius americanus*), western burrowing owl (*Athene cunicularia hypugaea*) and loggerhead shrike (*Lanius ludovicianus*).

Data obtained from Nevada BLM indicate various raptor species nest in the Browns Bench area (east of the Project area, west of Salmon Falls Creek Reservoir), including golden eagles, prairie falcon (*Falco mexicanus*) and red-tailed hawk (*Buteo jamaicensis*). The status of these nests is not known as surveys at these locations have not been performed since 1976.

Biological data obtained from the CDC represents a composite database of species observations over many years. For instance, observations of western burrowing owls and loggerhead shrikes are from 1993 and 1994, while Columbian spotted frog observations are from 1997 and 2001.

There are eight known sage-grouse leks located within the Project area boundary. Additional sage-grouse leks occur in the vicinity of the Project area. The status of greater sage-grouse leks appears to be current as IDFG maintains a current sage-grouse lek database. Many of the leks in the Browns Bench area were surveyed by IDFG in the spring of 2006.

Federal and State Sensitive Plant Species

No federally listed plant species occur within Twin Falls County and Elko County, Nevada. However, the CDC lists 13 sensitive or vulnerable plant species within Twin Falls County, of which, four have been documented to occur near the Project area. Sensitive species that have been known to occur in the vicinity of the Project area, as reported by the CDC, include: two-headed onion (*Allium anceps*), Newberry's milkvetch (*Astragalus newberryi*), Davis' peppergrass (*Lepidium davisii*), and White-margined wax plant (*Glyptopleura marginata*). Information obtained from the Nevada Natural Heritage Program (NNHP) list 40 sensitive plant species in Elko County. Spatial data obtained from the NNHP detailing species occurrences indicate none of these species have been found in the Project area or its vicinity.

1.2.2 Existing Cultural Resources Information

RES conducted a literature and records search at the Idaho State Historic Preservation Office (SHPO), a division of the Idaho State Historical Society, focusing specifically on lands comprising the Idaho portion of the Project area. A literature and records search for proposed facilities in Nevada using the Nevada Cultural Resources Information System (NVCRIS), an electronic database of the Nevada State Museum and Nevada State Historic Preservation Office. In addition, a literature and records search was conducted at the BLM Elko Field Office.

Preliminary record search results reveal the Idaho portion of the Project area to be an area of relatively high archaeological sensitivity. A majority of the archaeological sites are concentrated along the lowlands of the Browns Bench area and along the terraces around Salmon Falls Creek and Salmon Falls Creek Reservoir. A total of 219 archaeological sites were recorded within one mile of the Project area. Four sites are located directly within the Area of Potential Effect (APE) for proposed wind turbines and their associated collector lines. Three of the archaeological sites identified within the APE are potentially eligible for the NRHP; the rest have been determined ineligible.

Preliminary records search results for the Nevada portion of the Project area reveal that four known archaeological sites are located within the boundaries of the Project area.

No Traditional Cultural Properties were identified during the literature review. Traditional Cultural Properties are places that a community regards as important for its association with cultural practices or beliefs; and are afforded the same protection as archaeological sites and historic structures under federal law.

1.3 HEALTH, SAFETY, AND ENVIRONMENTAL COMMITMENT AND POLICY

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

1.4 ADAPTIVE MANAGEMENT STRATEGY

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

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 this proposed Project, learning and the resultant adapting of this POD will be based on rigorous project area and resource specific studies and monitoring, agency and Tribal consultation, recommendations of BLM resource specialists, the applicants engineering staff and changes in wind energy technology and products.

If, following completion of the NEPA process, the ROW grant is approved and the proposed Project constructed, adaptive management would be applied during the construction and operation of the Project. 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.

On China Mountain, turbines are planned to be aligned in multiple linear strings on parallel north-south trending ridgelines. Along those strings turbines are planned to be sited approximately one-quarter mile from each other and extend approximately 16 miles along the north-south ridgelines. 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 individual birds and bats at different times. It is through understanding of the individual behavior of each turbine in relationship to its location on the mountain through rigorous monitoring that will provide the opportunity to incorporate adaptive management principles.

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 and resource avoidance strategies, adaptive management reduces the probability of turbine operation interruptions. In addition, by continuing to monitor during construction and operations, a balance is reached between protecting the Project area environment and assuring its ability to operate.

The following are a few examples of how adaptive management will be applied on China 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 and resources. 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 potential impacts on sage-grouse, cultural and tribal resources, or other sensitive resources. 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 China 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.

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

The Wildlife Working Group will consist of interagency wildlife and other resource professionals. The core Wildlife Working Group will consist of the BLM and their contractor, Idaho Department of Fish and Game, Nevada Department of Wildlife, and the U.S. Fish and Wildlife Service. The core Wildlife Working Group will be responsible for advising the BLM and RES in several important scientific and technical areas, including:

- Identify data needs necessary to effectively evaluate potential impact of project development on natural resources;
- Develop wildlife baseline survey protocols;
- Participate, and contribute as appropriate, in collection of baseline information;
- Review baseline technical reports and data, and evaluate their adequacy;
- Develop Best Management Practices and mitigation measures necessary to balance any project impacts related to fish and wildlife;
- Develop the scientific foundation by which adaptive management strategies and mitigation related to fish and wildlife will be applied and implemented by the project;
- Assist with the development and/or further enhancement of alternatives.

Non Technical members that could be invited to the Wildlife Working Group meetings to dialogue and observe include the members of Native American Tribes including the Shoshone-Paiute Tribes and the Shoshone-Bannock Tribes, Local Sage-Grouse Working Group, Twin Falls County, Elko County, Idaho Power Company, Sierra Pacific Power, and RES.

This effort is intended to contribute individual perspective on appropriate scientific methods for data collection, appropriate mitigation and evaluation of studies in support of development of the Draft and Final Environmental Impact Statement being prepared by the BLM. It shall be considered part of the analysis process and does not constitute any decision action on the part of any of the participating parties."

1.5 COMMUNICATIONS PLAN

The proposed Project will be reviewed by the BLM, including the Elko Field Office and the Twin Falls District Office. Depending on resources identified on the site, agencies such as the U.S. Fish and Wildlife Service, State Historic Preservation Offices (SHPO), U.S. Army Corps of Engineers, the Federal Aviation Administration, and Twin Falls and Elko Counties. Potential permits and approvals that may be required for the Project are summarized in Appendix A.

1.5.1 Bureau of Land Management

As the majority of the proposed Project site is on BLM-administered land, the BLM will play an active role during the development and construction of the China Mountain Wind Power Project. RES will coordinate the project design using the adaptive management approach endorsed by the BLM, and BLM representatives would be consulted at critical development stages of the Project.

The proposed Project will be reviewed by the BLM, including the Elko Field Office and the Twin Falls District Office. Depending on resources identified on the site, agencies such as the U.S. Fish and Wildlife Service, State Historic Preservation Offices (SHPO), U.S. Army

Corps of Engineers, the Federal Aviation Administration, and Twin Falls and Elko Counties may be consulted and asked to review the Project.

The BLM will appoint a Field Office Manager as the authorized officer for this project. RES 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 to 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 RES 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 of the project and results of recent environmental monitoring. These reports are intended to maintain constant communication, and keep the BLM informed on mitigation results.

1.5.2 Idaho Department of Lands

Some of the project site land is administered by IDL. Approximately 10 percent of the project turbines are on IDL-administered land, as well as a portion of the project access roads. As such, RES will also coordinate the design and construction of the 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.

1.5.3 Local Government

RES will maintain open communications with the local governments in the vicinity of the project site, including those of Twin Falls County, Elko County, the communities of Rogerson, Twin Falls and Jackpot 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 the counties regarding noxious weed control).

RES 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.

1.5.4 Cultural Resources

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, RES 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 and the applicable protocols will be applied BLM/IDL/Counties will consult directly with the Idaho and Nevada State Historic Preservation Offices 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 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 and Nevada State Historic Preservation offices, if needed, will be completed prior to construction. Any resources discovered during construction will be evaluated by the BLM/IDL/County Field Officer or designee prior to any further surface disturbing activities in that area.

1.5.5 Native American Consultation

Consultation with Tribal Governments, recognizing Nation to Nation Status, will occur throughout the planning and design refinement process and will continue during construction to address Tribal concerns.

1.6 DESIGN APPROVAL PROCESS

While Plans of Development typically begin with project construction, RES will communicate and collaborate with the BLM 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.

RES will prepare drawings and documentation of the project design at critical design phases, and provide these drawings to the BLM for review. The intention of these reviews is to evaluate the disturbed area of the Project against the NEPA analysis and POD, and provide feedback to RES. The BLM 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 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 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(s)
- Electrical collection system alignment
- Substation(s) location and arrangement
- Transmission line alignment
- Blasting

For those design aspects described above that impact IDL lands, RES 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 (i.e. no independent engineering review or formal approval of the project design will be expected or required).

2.0 CONSTRUCTION

The actions necessary to construct the Project are described below. Where helpful, photos of similar activities from the construction of other wind energy projects have been added for illustration.

2.1 HEALTH, SAFETY, AND ENVIRONMENTAL PLAN

The proposed Project Health Safety and Environmental (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 will be expected to comply with these requirements at a minimum. Contractor safety plans will be reviewed for compliance.

Development of the HSE plan will be a collaborative effort between RES and the contractors with review by BLM. 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.

2.2 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 2.

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

In general, the design approach for the 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. 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/Counties approval).

Prior to the start of construction, RES will review and document the general condition of the site, including the levels of vegetation and areas of disturbance. When construction is completed RES 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.

RES understands and respects that much of the land at China Mountain is held in public trust, and as such the public have a right to expect access to the public land not to change. Public access to the public lands 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, blasting, wind turbine erection, foundation excavation, electrical collection system trenching, transmission line construction, and substation(s) construction. Once these activities are completed, public access to the public lands will resume to its current state.

RES also understands that the Federal lands on China Mountain are scrutinized by BLM as trustee for the Shoshone-Paiute Tribe and Shoshone-Bannock Tribe. Tribal access to the Project area will only be limited during construction to those specific areas where the construction activities could cause safety concerns for Tribal members. These activities include, but may not be limited to, blasting, wind turbine erection, foundation excavation, electrical collection system trenching, transmission line construction, and substation(s) construction. Once these activities are completed, Tribal access will resume to its current state.

2.2.1 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. Two public roads will be used to access the Project: Monument Springs Road, an unimproved county road accessed via Three Creek Road in the northern portion of the site, and Old Highway 93 in the southeastern portion of the site, near San Jacinto, Nevada. RES will apply for encroachment permits from Twin Falls County, Elko County, and the Nevada Department of Transportation prior to construction.

The proposed Project would include approximately 41 miles of new access roads and approximately 29 miles of existing road improvements. The exact length of new and modified access roads will be determined upon finalization of the site plan. 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. Figure 2-1 shows a typical wind power project road under construction.

Figure 2-1. Turbine Access Road Under Construction.

The access roads 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(s)
- Substation(s)
- O&M building(s)

Temporary access (during construction):

- Concrete batch plant
- Construction parking and lay-down areas

Temporary construction roads on the site are planned to be 30 feet wide and will consist of 12 inches of gravel base over compacted native subbase material. A geogrid or geotextile material may be used in areas of poor subgrade soils as soil reinforcement and/or to reduce the gravel base thickness requirement. Roads will be constructed up to a 10 percent maximum gradient.

When practical, the routing of existing roads will be improved rather than constructing new roads. 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. An InRoads® analysis will be conducted on all project roads to determine cut and fill volumes and if the project will have an excess of fill, be short on fill or balanced. Where possible, crossings at low spots or drainage courses will be at-grade with no culverts or extensive fill. Upon completion of construction, the construction road width of 30 feet will be reduced to a 20-foot service road width. The on-site service roads will be regraded smooth with low spots and ruts filled in with the extra gravel base materials. A qualified civil contractor will construct all required roads. During construction, the roads will be sprayed with water twice daily to control dust. Water will be purchased from private or public water supplies.

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 are planned to 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 road slope of 10 percent
- Maximum road width of 30 feet
- Final road width of 20 feet
- 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 20 miles per hour (mph) maximum on all project roads.

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

- Stake centerline of roads (see Section 2.4.1 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 roads (see Section 2.4.4 for details.)
- Separate and stockpile top soil for later use
- Grade roads to slopes/design indicated on construction drawings (see Section 2.4.5 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

Construction zones will be built around each wind turbine site. An area of approximately 185 feet by 180 feet 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 (Figure 2-2). 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 above), 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.

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 during the road construction will be used to return contours to near pre-construction conditions. Any remaining cut materials will be distributed across the area 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/Counties. Noxious weed control will continue on-site during the re-vegetation process and during the life of the Project.

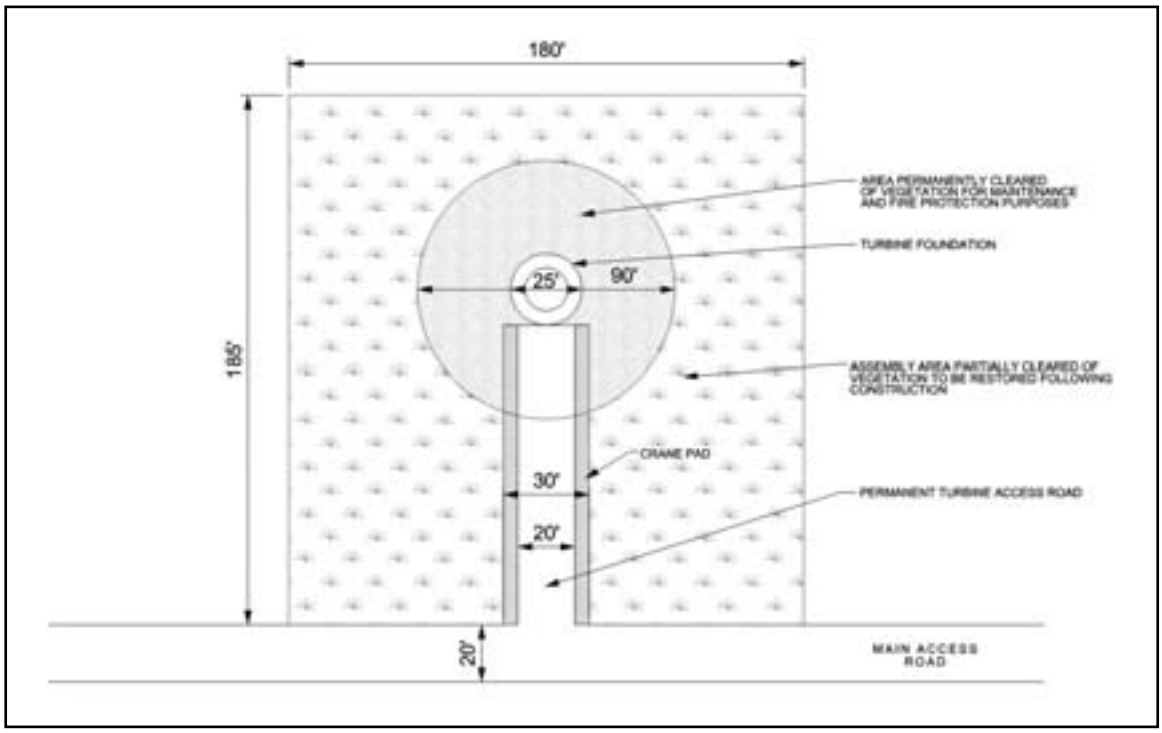

Figure 2-2. Detail of Typical Turbine Pad Layout.

2.2.2 Electrical Collection System

Each wind turbine at the proposed Project would generate power at 690 volts. For each turbine, there will be an associated step-up transformer that will increase the voltage of the electricity from 690 volts to 34.5 kV. Depending on the turbines selected for the Project, the step-up transformer may be housed in the nacelle or located approximately 5 feet away from the tower foundation on a reinforced concrete pad approximately 9 feet by 9 feet square and 12 inches thick. From each step-up transformer, power would be transmitted via 34.5 kV electric cables. Each wind turbine will be connected to an underground electrical cable to allow the generated energy to be sent to the project substation(s). 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, it is requested that flexibility be afforded to site a limited amount of overhead 34.5 kV cabling over geological and/or topographic features for which underground cabling is not practical. If native materials are found to provide insufficient thermal conductivity (i.e., allow heat to dissipate from the cables), RES 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 trenches will be filled with native material from the site.

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

- Survey/Stake Site (see Section 2.4.1)
- Trenching (see Section 2.4.9)
- Buried Cable Placement (see Section 2.6.1)

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(s) where several runs of cable will all be in the same area, RES 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 the surrounding surface will be re-contoured to a state similar to pre-construction and re-vegetated with a BLM/IDL/Counties-approved seed mixture.

2.2.3 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 2-3. The second foundation type is a “pier” foundation, and is shown in Figure 2-4. 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 a geotechnical investigation.

Figure 2-3. Mat Foundation Installation.

Figure 2-4. 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/Counties prior to their commencement.

- Survey/Stake Site (see Section 2.4.1)
- Clear/Grub Site (see Section 2.4.4)
- Perform site grading (see Section 2.4.5)
- Install Foundations
- Rock Removal and Blasting (if necessary, see Section 2.4.3)
- Excavation (see Section 2.4.7)

- Place rebar (see Section 2.5.2)
- Place turbine base
- Place forms (see Section 2.5.3)
- Pour concrete (see Section 2.5.4)
- 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 may request that all excavated materials from their lands should be used within the boundaries of their land. If RES determines that some native materials will need to be removed from IDL land, or excavated materials from BLM land brought onto IDL land, RES will seek approval for such activities from IDL and the BLM.

RES 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 be 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 a BLM/IDL/Counties-approved seed mixture.

2.2.4 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 (Figure 2-5). 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 at construction laydown areas until full project site access is available.

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

- Turbine component delivery and storage (see Section 2.7.1)
- Crane movement or assembly (see Section 2.7.2)
- Wind turbine component lifts (see Section 2.7.3)

Figure 2-5. Wind Turbine and Crane.

2.2.5 Meteorological Tower Installation

Up to four permanent meteorological towers will be installed on site to take accurate weather readings used to track the performance of the wind turbines (Figure 2-6). These readings will include wind speed and direction, barometric pressure, humidity, and ambient temperature. The meteorological towers will be assembled on site. Due to terrain, wind, and possible icing conditions at the site, RES has determined that non-guyed monopole meteorological towers are the most effective design. These towers will use anti-perch points on horizontal surfaces of the tower to prevent the perching and nesting of birds.

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 China 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/Counties prior to their commencement.

- Survey/Stake Site (see Section 2.4.1)
- Clear/Grub Site (see Section 2.4.4)
- Perform Site Grading (see Section 2.4.5)
- Install Foundations
- Excavation (see Section 2.4.7)
- Place Rebar (see Section 2.5.2)
- Place Forms (see Section 2.5.3)
- Pour Concrete (see Section 2.5.4)
- Install Below Grade Ground Grid (see Section 2.6.2)
- Install Communications and Electrical Lines (see Section 2.6.1)
- Erect Meteorological Tower (see Section 2.7.3)

Figure 2-6. Meteorological Tower.

2.2.6 Substation(s)

The energy generated by the wind turbines will be delivered to the substation(s) via the underground collection system. The substation(s) would increase the voltage of electricity from 34.5 kV to 138 kV or 345 kV, the respective voltages of the existing Idaho Power and Sierra Pacific Power transmission lines. Also, capacitor banks and other equipment may be installed at the substation(s) to provide the voltage support necessary to meet the interconnection requirements for the Project. A small control building will exist within the substation(s) for electrical metering equipment, and the supervisory control and data acquisition (SCADA) system for the wind turbines. Each substation would be located near the geographic center of the wind turbines from which it is collecting electricity. Riser poles at the substation connection point will have a pole-top, three-phase switch (operable from the ground), surge protection, insulated cable terminations and jumper wires, wildlife boots (a protective covering over cable terminators), and lightning arresters. The substation(s) site would be a graveled, fenced area with transformer and switching equipment and an area to park utility vehicles. Transformers would be non-polychlorinated biphenyl (PCB) oil-filled types.

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/Counties prior to their commencement.

- Survey/Stake Site (see Section 2.4.1)
- Clear/Grub Site (see Section 2.4.4)
- Perform Site Grading (see Section 2.4.5)
- Install Foundations
- Excavation (see Section 2.4.7)
- Place Rebar (see Section 2.5.2)
- Place Forms (see Section 2.5.3)
- Pour Concrete (see Section 2.5.4)
- 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

2.2.7 Transmission Line

To interconnect the Project with the existing electrical transmission grid, a 3-phase 138 kV or 345 kV overhead transmission circuit would be constructed from each substation to a switching station at the point of interconnection with an existing transmission line. The voltage of the overhead transmission line will be the same as the existing transmission line. The length of the overhead line will depend on the location of the Project substation(s), which in turn, will depend on the wind turbines locations from which it collects electricity. Single steel poles or double wood poles will likely support the overhead transmission lines. The distance between pole structures will be in the range of 400 to 500 feet. 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 2.4.1)
- Clear/Grub Site (see Section 2.4.4)
- Perform Site Grading (see Section 2.4.5)
- Install transmission poles
- Wire stringing, tensioning, and clipping
- Terminate wires at substations

Figure 2-7. Transmission Line Under Construction.

2.2.8 Switching Stations

The overhead transmission line will transmit electricity from each Project substation to a switching/interconnection station/facility. The switching stations will be located adjacent to the associated existing 138 kV or 345 kV transmission lines, as shown in Figure 2-7. Each switching station would occupy approximately 2 acres, and would be a graveled, fenced area with switching equipment and an area to park utility vehicles.

The construction steps of the switching stations are listed below.

- Survey/Stake Site (see Section 2.4.1)
- Clear/Grub Site (see Section 2.4.4)
- Perform Site Grading (see Section 2.4.5)
- Install Foundations
- Excavation (see Section 2.4.7)
- Place Rebar (see Section 2.5.2)
- Place Forms (see Section 2.5.3)
- Pour Concrete (see Section 2.5.4)

- 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 Switching Station Steel Structures and Control Enclosures
- Install Switching Station Electrical Equipment (Circuit Breakers, Transformers, Disconnect Switches, Potential Transformers, etc.)
- Install Above Grade Ground Stingers
- Install Switching Station Bus Conductors & Jumpers
- Install Control/Relay & Communication Materials
- Install Secondary Control/Power Cable and Terminations
- Install Final Layer of Crushed Rock Surfacing
- Perform Switching Station Testing/Commissioning Activities
- Energize Switching Station

2.2.9 O&M Building(s)

The Project will require the establishment of one or more O&M buildings. These 4,500 square foot (sq. ft.) buildings will house storage for small parts, offices, a kitchen, bathroom, shower and utility sink for the project staff, computers and control equipment for the wind turbines, and shop facilities (Figure 2-8). This building will be pre-engineered, and assembled and finished on-site. It will most likely be located at the north end of the Project. The exact location for the O&M building(s) has not been determined at this time. The O&M building(s) will be painted to match the surrounding vegetation or soil color.

The construction of the O&M building(s) will require the following activities:

- Survey/Stake Site (see Section 2.4.1)
- Clear/Grub Site (see Section 2.4.4)
- Perform Site Grading (see Section 2.4.5)
- Install Foundations
- Excavation (see Section 2.4.7)
- Pour Concrete (see Section 2.5.4)
- Install Communications and Electrical Lines (see Section 2.6.1)

Figure 2-8. Typical Wind Energy Facility O&M Building.

2.2.10 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 weather conditions or wildlife protection. In general, a typical schedule for the construction of wind energy projects of this scale is shown below.

Construction will be conducted in phases, with the first phase anticipated to begin no earlier than 2009. Construction of each phase will be initiated in the spring and could take up to eight months to complete. Table 2-1 identifies the proposed construction schedule.

Table 2-1. Proposed China Mountain Construction Schedule for each Phase.

Facility	Timeframe
Road Construction	Week 1 to 12
Road Maintenance	Week 13 to 20
Foundation Construction	Week 9 to 13
Trenching and Cabling	Week 12 to 24
Wind Turbine Generator Installation	Week 23 to 27
Wind Turbine Generating Commissioning	Week 24 to 30
O&M Building(s)	Week 4 to 28
Substations Construction	Week 1 to 24
Transmission Line	Week 1 to 24
Project Substantial Completion	Week 30
Site Restoration	Week 28 to 33

The schedule for construction on China Mountain may include a demobilization of outdoor work on the mountain if winter weather and ground conditions make it impractical to continue construction. Any interior work, such as the commissioning of the wind turbines and finishing of the O&M building(s), 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.

2.3 GENERAL CONSTRUCTION ACTIVITIES

2.3.1 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 dispose of it at a county or approved private landfill. Materials still needed at the turbine site will be assembled and secured at the site, and 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/Counties.

2.3.2 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. 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 2.8.5). 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 Highway 93) to avoid traffic congestion. All trucks will be washed down at a location approved by the BLM/IDL/Counties for noxious weed control prior to entering the site.

2.3.3 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 area where most construction materials will be offloaded and stored will be developed and appropriately sited following more detailed analysis of the Project area. 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 a lay-down yard. Likewise, materials needed for the substation construction or electrical collection system will be offloaded near their use sites.

2.3.4 Fencing

RES will post warning signs along the access roads informing the public of construction activities, and recommending the public stay off the site. 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. RES will coordinate the fencing with the BLM/IDL/Counties. 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.

2.4 CIVIL CONSTRUCTION ACTIVITIES

2.4.1 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 steel 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 roads
- wind turbine locations
- meteorological tower locations
- substation boundary
- O&M Building boundary
- disturbance areas
- construction facilities
- avoidance areas

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 and cultural resource impacts during the surveying and staking process include:

- Wildlife: Sage-Grouse (see Section 2.8.2)
- Noxious Weed Control (see Section 2.8.5)
- Sensitive Plant Species (see Section 2.8.4)
- Cultural Resources (see Section 2.8.11)

2.4.2 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 alignments. 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 laboratory for 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.

Potential environmental and cultural resource impacts during geotech sampling include:

- Wildlife: Sage-Grouse (see Section 2.8.2)
- Noxious Weed Control (see Section 2.8.5)
- Sensitive Plant Species: (see Section 2.8.4)
- Noise (see Section 2.8.7)
- Water Resources (see Section 2.8.8)
- Cultural Resources (see Section 2.8.11)

2.4.3 Rock Removal/Blasting

It is assumed the some blasting will be necessary for turbine foundation and road construction. 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 2.8.8).

Potential environmental and cultural resource impacts during rock removal and blasting include:

- Public Safety (see Section 2.8.1)
- Wildlife: Sage-Grouse (see Section 2.8.2)
- Livestock (see Section 2.8.3)
- Sensitive Plant Species: (see Section 2.8.4)
- Noxious Weed Control (see Section 2.8.5)
- Dust (see Section 2.8.6)
- Noise (see Section 2.8.7)
- Water Resources (see Section 2.8.8)
- Cultural Resources (see Section 2.8.11)

2.4.4 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/Counties Authorized Officers.

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 and cultural resource impacts during the clearing and grubbing process include:

- Wildlife: Sage-Grouse (see Section 2.8.2)
- Wildlife: Golden Eagles (see Section 2.8.2)
- Wildlife: Migratory Birds (see Section 2.8.2)
- Wildlife: Mule Deer (see Section 2.8.2)
- Noxious Weed Control (see Section 2.8.5)
- Sensitive Plant Species: (see Section 2.8.4)
- Dust (see Section 2.8.6)
- Noise (see Section 2.8.7)
- Cultural Resources (see Section 2.8.11)

2.4.5 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(s) will begin. Once the turbine sites, substation(s), and O&M building(s) 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 and cultural resource impacts during the site grading process include:

- Wildlife: Sage-Grouse (see Section 2.8.2)
- Wildlife: Golden Eagles (see Section 2.8.2)
- Wildlife: Migratory Birds (see Section 2.8.2)
- Wildlife: Mule Deer (see Section 2.8.2)
- Livestock (see Section 2.8.3)
- Plant Species: (see Section 2.8.4)
- Noxious Weed Control (see Section 2.8.5)
- Dust (see Section 2.8.6)
- Noise (see Section 2.8.7)
- Water Resources (see Section 2.8.8)
- Cultural Resources (see Section 2.8.11)

2.4.6 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 and cultural resource impacts during the road base construction include:

- Public Safety (see Section 2.8.1)
- Livestock (see Section 2.8.3)
- Noxious Weed Control (see Section 2.8.5)
- Dust (see Section 2.8.6)
- Noise (see Section 2.8.7)
- Water Resources (see Section 2.8.8)
- Spill Prevention Plan (see Section 2.8.9)
- Cultural Resources (see Section 2.8.11)

2.4.7 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/Counties Authorized Officers.

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/Counties Authorized Officers.

Potential environmental and cultural resource impacts during excavation include:

- Public Safety (see Section 2.8.1)
- Wildlife: Sage-Grouse (see Section 2.8.2)
- Livestock (see Section 2.8.3)
- Plant Species (see Section 2.8.4)
- Noxious Weed Control (see Section 2.8.5)
- Dust (see Section 2.8.6)
- Noise (see Section 2.8.7)
- Water Resources (see Section 2.8.8)
- Spill Prevention Plan (see Section 2.8.9)
- Cultural Resources (see Section 2.8.11)

2.4.8 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 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 2.8.2)
- Dust (see Section 2.8.6)
- Noise (see Section 2.8.7)
- Water Resources (see Section 2.8.8)

2.4.9 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 and cultural resource impacts during trenching include:

- Public Safety (see Section 2.8.1)
- Wildlife: Sage-Grouse (see Section 2.8.2)
- Wildlife: Golden Eagles (see Section 2.8.2)
- Wildlife: Migratory Birds (see Section 2.8.2)
- Wildlife: Mule Deer (see Section 2.8.2)
- Livestock (see Section 2.8.3)
- Noxious Weed Control (see Section 2.8.5)
- Dust (see Section 2.8.6)
- Noise (see Section 2.8.7)
- Water Resources (see Section 2.8.8)
- Cultural Resources (see Section 2.8.11)

2.4.10 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/Counties Authorized Officers.

2.4.11 Erosion Control

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

2.5 STRUCTURAL CONSTRUCTION ACTIVITIES

2.5.1 Concrete Supply

A batch plant will be set up on-site to provide for the significant amounts of concrete necessary for base foundations of the wind turbines and substation equipment. Attempting to bring trucks onto the site with pre-mixed concrete is not feasible with the distance to the nearest concrete plant and especially the time needed to negotiate the slow speed project roads. The location of the batch plant will be determined following collection of more detailed site specific information and through the application of adaptive management.

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 the use schedule as possible to minimize storage.

Potential environmental impacts during the batch plant operational life include:

- Public Safety (see Section 2.8.1)
- Dust (see Section 2.8.6)
- Noise (see Section 2.8.7)
- Water Resources (see Section 2.8.8)
- Spill Prevention Plan (see Section 2.8.9)

2.5.2 Steel Placement

The construction of the numerous turbine foundations will require a considerable amount of steel reinforcement. A lay down area will be needed to store 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.
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 2.8.6)
- Noise (see Section 2.8.7)

2.5.3 Formwork

Depending on the type of turbine foundation selected (Section 2.2.3), 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.

2.5.4 Concrete Placement

Concrete placement will involve two different approaches based on the discussion in Section 2.2.3. 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 2.8.1)
- Dust (see Section 2.8.6)
- Noise (see Section 2.8.7)
- Water Resources (see Section 2.8.8)
- Spill Prevention Plan (see Section 2.8.9)

2.6 ELECTRICAL CONSTRUCTION ACTIVITIES

2.6.1 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. 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 2-9). 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 at this time which method will be used at China Mountain. As discussed in Section 2.4.7, 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 of the cable at a depth of 12 inches, which will act as a visual reminder of the cable's presence for future site work.

Figure 2-9. Trenching Machine Example.

Potential environmental impacts during buried cable placement include:

- Public Safety (see Section 2.8.1)
- Sensitive Plant Species (see Section 2.8.4)
- Noxious Weed Control (see Section 2.8.5)
- Dust (see Section 2.8.6)
- Noise (see Section 2.8.7)
- Cultural Resources (see Section 2.8.11)

2.6.2 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 2.8.1)
- Sensitive Plant Species (see Section 2.8.4)
- Noxious Weed Control (see Section 2.8.5)
- Dust (see Section 2.8.6)
- Noise (see Section 2.8.7)

2.6.3 Buswork and Electrical Line Connections

The majority of the electrical work performed within the BLM/IDL or private lands 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 34.5 kV buswork. This buswork connects the turbines connected on different feeder lines (about 10 to 12 wind turbines per line) 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.

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

- Dust (see Section 2.8.6)
- Noise (see Section 2.8.7)
- Spill Prevention Plan (see Section 2.8.9)

2.6.4 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(s).

Potential environmental impacts during communication systems installation include:

- Public Safety (see Section 2.8.1)
- Sensitive Plant Species (see Section 2.8.4)
- Noxious Weed Control (see Section 2.8.5)
- Dust (see Section 2.8.6)
- Noise (see Section 2.8.7)

2.6.5 Aviation Lighting on Wind Turbines and Meteorological Towers

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 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 includes 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. RES will work with FAA from the beginning of the Project on lighting.

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.

2.7 WIND TURBINE ERECTION

2.7.1 Turbine Component Delivery and Storage

As wind turbine components arrive at the China 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. 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. Completion of detailed resource inventories of the Project area may result in other timing restrictions on construction. In these instances, some major components may be offloaded and temporarily stored at a lay-down area (see Section 2.2.8). These components will then be moved to their turbine site as soon as feasible.

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.

Potential environmental impacts during turbine component delivery and storage include:

- Public Safety (see Section 2.8.1)
- Dust (see Section 2.8.6)
- Noise (see Section 2.8.7)

2.7.2 Crane Movement or Assembly

When a large crane first arrives onto the Project site, it will be taken to the location for the 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. 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 2.8.1)
- Wildlife: Sage-Grouse (see Section 2.8.2)
- Livestock (see Section 2.8.3)
- Sensitive Plant Species (see Section 2.8.4)
- Noxious Weed Control (see Section 2.8.5)
- Dust (see Section 2.8.6)
- Noise (see Section 2.8.7)
- Spill Prevention Plan (see Section 2.8.9)

2.7.3 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. Once the last tower section is in

place, the nacelle is secured to the top of the tower. 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.

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 could 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 2.8.1)
- Noise (see Section 2.8.7)

2.8 POTENTIAL ENVIRONMENTAL AND CULTURAL RESOURCE IMPACTS AND MITIGATION MEASURES DURING CONSTRUCTION

The potential environmental and cultural resource impacts of the construction of the Project are discussed below. Construction staff site orientation will include education on these and likely other 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 RES 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 and cultural resource 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/Counties Authorized Officers.

2.8.1 Public Safety

Given that most of the site is publicly-owned, the public has a right to access the public portions of the site and use it for recreation. This right will be balanced with the protection of public safety and control of vandalism, a key aspect of the Project HSE plan. To accomplish this, RES 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.

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 access roads into the Project area, Monument Springs Road to the north and Old U.S.-93 to the south will be heavily used by construction vehicles, RES may need to control and limit use of these roads to the public during certain portions of the construction process. Controlling access to these roads during particular construction activities will enhance the safety both for the public and

for the project construction personnel. At this time it is anticipated that other existing roads in the Project area will not be altered or closed. Signs will be added at other commonly-used access roads to the mountain indicating that some roads may be closed, and asking the public not to use the project roads if possible, during the construction period.

The Project area will not be closed to livestock grazing permit holders, and RES will work with the livestock grazing permit holders to coordinate use of the Project area during construction.

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

Fencing: For those areas where public safety could be endangered, RES 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, RES 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.

2.8.2 Wildlife

Sage-Grouse

Impacts: The success of the sage-grouse is associated with the health of the sagebrush shrub-steppe community. Construction activity including land grading and clearing is the primary disturbance to sage-grouse. Eight leks (spring courtship grounds) have been identified by the CDC within the Project area. The status of these leks is unknown at this time.

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. Development will avoid any active leks and minimize clearing, grubbing, or otherwise disturbing natural vegetation in the vicinity, especially the sagebrush shrub community. 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/IDGF for further inspection.

Golden Eagles

Impacts: Golden Eagles are protected under the Bald Eagle Protection Act. Six golden eagle nests have been identified by the BLM Elko Field Office in the vicinity of the southern transmission interconnect line. The status of these nests is currently unknown. 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 will establish exclusion areas one-quarter mile centered around the golden eagle nests. No Project features will be sited 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 U.S. 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.

2.8.3 Livestock

Impacts: Based on current estimates, the Project is expected to result in the permanent loss of about 171-176 acres of rangeland from turbines, roads, and related structures, plus the temporary loss of an additional 441-535 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 (441-535 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 RES 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 the construction period. Such relocation will be with the agreement of and no cost to the rancher.

2.8.4 Protected Plant Species

Based preliminary background research, no threatened or endangered species listed by the federal Endangered Species Act are believed to be found on the Project site. BLM Sensitive Plant Species may be present within the Project area but at this time it is unknown exactly which species could occur. During the NEPA process, surveys of the Project area for BLM sensitive plant species will occur.

2.8.5 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. RES 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. RES also will work with the BLM/IDL and the Twin Falls and Elko counties Weed Control offices 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. RES will work with the Twin Falls and Elko County Weed Control offices to perform monthly weed surveys on the Project site during the spring and summer months of the construction phase of the Project.

2.8.6 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, RES 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/Counties.

2.8.7 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 residence greater than two miles away. Jackpot, Nevada the nearest community is eight 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, RES 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.

2.8.8 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 intermittent streams and drainages originate in the Project area. Springs are also likely to occur in the Project area and 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, if present 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.

2.8.9 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 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 percent of the full volume of the fuel tank.

Monitoring: The SPCCP will include the spill monitoring protocol.

2.8.10 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 in the Project area or its vicinity. 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 each project construction vehicle, in the substation control building, and the O&M building(s). 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. RES 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 Jarbidge 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.

2.8.11 Cultural Resources

Impacts: The proposed Project area may contain artifacts of historical significance, as defined by the National Register of Historic Places. Construction of the Project could potentially impact, damage, or destroy these artifacts, and could degrade the cultural value of the sites.

Mitigation: Prior to construction, the proposed Project area will be surveyed for cultural resources (historic and archeological). Any cultural resources determined to be eligible for

the National Register of Historic Places will be avoided through modification of the project design. The approximate boundaries of any eligible cultural resources within the project construction area will be plotted on the project civil design drawings. RES will work to avoid construction within these boundaries. If construction within these boundaries is determined necessary 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 cultural resource boundaries. 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 1.5.4.

3.0 OPERATION & MAINTENANCE

The typical activities necessary to operate and maintain the China Mountain Wind Power Project are described below. A more detailed O&M plan will be developed for the Project and provided to the BLM/IDL/Counties 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 Project, operators of the Project will continue to work closely with the BLM/IDL/Counties 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/Counties and using input from the Technical Steering Committee.

3.1 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/Counties requirements that have not already been addressed in the plan will be added to ensure the continued focus on health, safety, and environmental awareness.

3.2 PROJECT OPERATION AND MAINTENANCE PLAN

The 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 O&M plan will include descriptions of each of the following major scheduled activities:

- Project Administration and Training (see Section 3.3.1)
- Project Performance Monitoring (see Section 3.3.3)
- Scheduled Wind Turbine Maintenance (see Section 3.4.2)
- Scheduled Balance of Plant Maintenance (see Section 3.4.4)
- Environmental Monitoring (see Section 3.3.4)

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 3.4.3)
- Balance of Plant Maintenance (see Section 3.4.4)

As with the construction phase of the Project, RES understands that most of 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 public land parcels of the Project site to maintain public safety. Such situations will be discussed in the detailed Project O&M plan.

3.3 OPERATION ACTIVITIES

The activities necessary for the efficient operation of the Project are described below. Maintenance activities are discussed in Section 3.4.

3.3.1 Project Administration

The administration of the 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 building(s) will be staffed during normal business hours, and will include a supervisor and project maintenance staff. The O&M facility will likely be located at the north end of the Project on BLM or private land near Monument Springs Road, a county road accessed via Three Creek Road.

There are no environmental impacts expected due to project administration.

3.3.2 Orientation and Training

All maintenance employees on 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.

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

3.3.3 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 3.4).

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.

3.3.4 Environmental Monitoring

One of the major responsibilities of the Project owner will be to ensure the proper environmental monitoring activities are being performed, in accordance with the requirements of the Project HSE manual. During the refinement of this POD and through the analysis of potential Project impacts determined through the NEPA process, a Project specific environmental monitoring program will be developed. The environmental monitoring program will incorporate monitoring observations and mitigation measures as needed into standard operating procedures for the Project to minimize future environmental impacts.

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

There are no environmental impacts expected due to environmental monitoring.

3.4 MAINTENANCE ACTIVITIES

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

3.4.1 Project Drive-By Inspections

Through the process of performing the operations activities discussed in Section 3.3 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 and transmit that information real time to personnel monitoring the Project operation at the O&M facility.

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, cultural resources or the environment in general that cannot be immediately fixed will be reported to the BLM/IDL/Counties Authorized Officers.

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 3.5.2)
- Livestock (see Section 3.5.3)
- Noxious Weed Control (see Section 3.5.5)
- Dust (see Section 3.5.6)
- Noise (see Section 3.5.7)

3.4.2 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. 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 potentially imposed during the lekking season.

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 so as to address potential restrictions during the lekking season.

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/Counties Authorized Officers.

3.4.3 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 project pick-up trucks or 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 and cultural resource impacts by minor wind turbine repairs include:

- Public Safety (see Section 3.5.1)
- Wildlife: Sage-Grouse (see Section 3.5.2)
- Livestock (see Section 3.5.3)
- Noxious Weed Control (see Section 3.5.5)
- Dust (see Section 3.5.6)
- Noise (see Section 3.5.7)
- Spill Prevention Plan (see Section 3.5.9)
- Hazardous Materials Storage and Removal (see Section 3.5.11)
- Cultural Resources (see Section 3.5.12)

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 2.7.2 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 2.2.1).

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 is 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 and cultural resource impacts by major wind turbine repairs include:

- Public Safety (see Section 3.5.1)
- Wildlife: Sage-Grouse (see Section 3.5.2)
- Livestock (see Section 3.5.3)
- Noxious Weed Control (see Section 3.5.5)
- Dust (see Section 3.5.6)
- Noise (see Section 3.5.7)
- Spill Prevention Plan (see Section 3.5.9)
- Hazardous Materials Storage and Removal (see Section 3.5.11)
- Cultural Resources (see Section 3.5.12)

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 2.2.4 above. The wind turbine components will be removed in the reverse order they were installed (see Section 2.7.3). 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 2.7.1. The wind turbine would then be erected again 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.

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

Potential environmental and cultural resource impacts by wind turbine replacements include:

- Public Safety (see Section 3.5.1)
- Wildlife: Sage-Grouse (see Section 3.5.2)
- Livestock (see Section 3.5.3)
- Noxious Weed Control (see Section 3.5.5)
- Dust (see Section 3.5.6)
- Noise (see Section 3.5.7)
- Spill Prevention Plan (see Section 3.5.9)
- Hazardous Materials Storage and Removal (see Section 3.5.11)
- Cultural Resources (see Section 3.5.12)

3.4.4 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(s) 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. RES 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 3.5.2)
- Noxious Weed Control (see Section 3.5.5)
- Dust (see Section 3.5.6)
- Noise (see Section 3.5.7)
- Spill Prevention Plan (see Section 3.5.9)
- Hazardous Materials Storage and Removal (see Section 3.5.11)

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 be used only after consultation with the BLM/IDL/Counties Authorized Officer.

Potential environmental cultural resource impacts by road maintenance include:

- Wildlife: Sage-Grouse (see Section 3.5.2)
- Noxious Weed Control (see Section 3.5.5)
- Dust (see Section 3.5.6)
- Noise (see Section 3.5.7)
- Spill Prevention Plan (see Section 3.5.9)
- Hazardous Materials Storage and Removal (see Section 3.5.11)
- Cultural Resources (see Section 3.5.12)

O&M Building Maintenance

Any maintenance requirements for the O&M building(s) are expected to be typical for building(s) 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 3.5.7)
- Spill Prevention Plan (see Section 3.5.9)
- Hazardous Materials Storage and Removal (see Section 3.5.11)

3.5 Potential Environmental and Cultural Resource Impacts and Mitigation Measures for Operations

The identified potential environmental and cultural resource impacts of the operation of the 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 or cultural resource 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/Counties and the Wildlife Working Group to adapt the mitigation and monitoring practices for wildlife and special status species. If mitigation and monitoring are

found to be ineffective for cultural resources the BLM will consult with the Shoshone-Paiute Tribes and Shoshone-Bannock Tribes to adapt the mitigation and monitoring plan.

3.5.1 Public Safety

Given that the site is owned and administered by the BLM/IDL/Counties, 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.

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).

Fencing: The area around the substations will be fenced per requirements for public safety. In addition, the O&M building(s) and associated equipment parking areas will be fenced. No other permanent fencing is currently anticipated. 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.

3.5.2 Wildlife

Sage-Grouse

Impacts: The success of the sage-grouse is associated with the health of the sagebrush shrub-steppe community.

Mitigation: Eight leks (spring courtship grounds) have been identified in the Project area. Except in times of emergency, O&M activities will be scheduled to avoid impacting known leks during the spring mating season.

Monitoring: Following determination of potential impacts of the Project to sage-grouse, a detailed monitoring plan will be developed during the NEPA process.

At this time it is anticipated that at a minimum the site would 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. Six golden eagle nests have been identified by the BLM Elko Field Office in the vicinity of southern

transmission interconnect line. However, the status of these nests, whether active, occupied or inactive, is currently unknown. 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 will establish exclusion areas around known active golden eagle nests. Activities within these areas will be avoided whenever possible.

Monitoring: Following determination of potential impacts of the Project to golden eagles a detailed monitoring plan will be developed during the NEPA process.

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, blade positioned "upwind" of the respective towers, 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/Counties to determine if additional mitigation measures are appropriate.

Monitoring: Following determination of potential impacts of the Project to migratory birds a detailed monitoring plan will be developed during the NEPA process.

Mule Deer

Impacts: The Project is expected to 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/IDFG for further action.

3.5.3 Livestock

Impacts: The Project is expected to result in the permanent loss of about 171-176 acres of potential 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 (approximately 441-535 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. It is expected that livestock will coexist with the Project without difficulty, as has been observed at other wind energy projects. 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, permittees, and the BLM/IDL/Counties Authorized Officers.

3.5.4 Protected Plant Species

Based preliminary background research, no threatened or endangered species listed by the federal Endangered Species Act are believed to be found on the Project site. BLM Sensitive Plant Species may be present within the Project area but at this time it is unknown exactly which species could occur. During the NEPA process, surveys of the Project area for BLM sensitive plant species will occur.

Impacts: No operational impacts would be anticipated to BLM sensitive plant species.

Mitigation: None proposed.

Monitoring: No monitoring program is expected to be needed.

3.5.5 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 Twin Falls and Elko County Weed Control offices 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 Twin Falls and Elko County Weed Control offices, no other monitoring program for noxious weeds during operation is currently expected.

3.5.6 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 93, 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/Counties.

3.5.7 Noise

Impacts: During Project operation, no significant noise impacts are expected. The Project site is remote and unpopulated with the nearest residence greater than 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 and source. If noise levels are found to be unsatisfactory, alternative operations, maintenance, or mitigation measures will be explored.

3.5.8 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. Accidental 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.

3.5.9 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 and spill clean-up protocol.

Monitoring: The SPCCP will include the spill monitoring protocol.

3.5.10 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 accidentally started from operation activities, ignited by lightning, or caused by non-project related human activity in the China 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(s). 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 2.8.10.

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.

3.5.11 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(s) 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/Counties 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. 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.

3.5.12 Cultural Resources

Impacts: The proposed Project area may contain cultural resources of historical significance, as defined by the National Register of Historic Places. Operation and Maintenance of the Project is not anticipated to result in impacts to cultural resources or to degrade the cultural value of these sites. The only potential for impacts to cultural resources could occur from the need to reconstruct a crane pad for unanticipated turbine replacement.

Mitigation: Prior to construction of the crane pad, the cultural resources report prepared prior to construction of the project will be reviewed to determine if cultural resources are present in the area. If cultural resources are determined to be present, a site survey by a BLM authorized Archaeologist will be completed. The approximate boundaries of any eligible cultural resources within the vicinity of the turbine that requires replacement will be plotted

on construction design drawings. The crane pad will sited to avoid any cultural resources present.

Monitoring: Field personnel will be instructed to watch for potential artifacts, especially in areas in or near identified cultural resource boundaries. 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 DECOMMISSIONING

As with any energy project, the China Mountain 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/Counties 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.

4.1 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.

4.2 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.

4.3 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.

4.3.1 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. If the requirements for walking the cranes cannot be met 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 cultural resource impacts caused by crane movement and assembly include:

- Public Safety (see Section 4.8.1)
- Wildlife: Sage-Grouse (see Section 4.8.2)
- Livestock (see Section 4.8.3)
- Dust (see Section 4.8.6)
- Noise (see Section 4.8.7)
- Cultural Resources (see Section 4.8.11)

4.3.2 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 be 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 4.8.1)
- Noise (see Section 4.8.7)

4.3.3 Component Removal

The most efficient manner for component removal will be 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. 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 4.8.1)
- Wildlife: Sage-Grouse (see Section 4.8.2)
- Livestock (see Section 4.8.3)
- Dust (see Section 4.8.6)
- Noise (see Section 4.8.7)

4.4 ELECTRICAL SYSTEM REMOVAL

4.4.1 Buried Cable Removal

Between each of the turbine locations will be a buried electrical cable and fiber optic cable. The project owners will discuss with the BLM/IDL/Counties 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 4.7.2.

Potential environmental and cultural resource impacts by buried cable removal include:

- Public Safety (see Section 4.8.1)
- Wildlife: Sage-Grouse (see Section 4.8.2)
- Livestock (see Section 4.8.3)
- Noxious Weed Control (see Section 4.8.5)
- Dust (see Section 4.8.6)
- Noise (see Section 4.8.7)
- Water Resources (see Section 4.8.8)
- Cultural Resources (see Section 4.8.11)

4.4.2 Substation Disassembly and Equipment Removal

Once the Project and transmission line is de-energized, the substation(s) 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) and crushed. Native rock will be scattered on-site.

The project owners will discuss with the BLM/IDL/Counties 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 4.4.1 above.

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

- Public Safety (see Section 4.8.1)
- Livestock (see Section 4.8.3)
- Noxious Weed Control (see Section 4.8.5)
- Dust (see Section 4.8.6)
- Noise (see Section 4.8.7)
- Water Resources (see Section 4.8.8)

4.4.3 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 4.7 below.

Potential environmental and cultural resource impacts caused by transmission line removal include:

- Public Safety (see Section 4.8.1)
- Livestock (see Section 4.8.3)
- Noxious Weed Control (see Section 4.8.5)
- Dust (see Section 4.8.6)
- Noise (see Section 4.8.7)
- Water Resources (see Section 4.8.8)
- Cultural Resources (see Section 4.8.11)

4.5 OPERATIONS AND MAINTENANCE BUILDING REMOVAL

If an O&M building(s) are 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 decommissioned in a manner consistent with state and local health regulations.

Potential environmental impacts caused by the O&M building(s) removal include:

- Public Safety (see Section 4.8.1)
- Livestock (see Section 4.8.3)
- Noxious Weed Control (see Section 4.8.5)
- Dust (see Section 4.8.6)
- Noise (see Section 4.8.7)
- Water Resources (see Section 4.8.8)

4.6 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. Shallow foundations (like that for the O&M buildings) 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 4.8.1)
- Wildlife: Sage-Grouse (see Section 4.8.2)
- Livestock (see Section 4.8.3)
- Noxious Weed Control (see Section 4.8.5)
- Dust (see Section 4.8.6)
- Noise (see Section 4.8.7)
- Water Resources (see Section 4.8.8)

4.7 CIVIL DECOMMISSIONING ACTIVITIES

4.7.1 Road Removal

The BLM/IDL/Counties and private land owners 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 China Mountain, the BLM/IDL/Counties and private land owners 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/Counties and private land owners.

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 be removed down to grade. Any materials native to China Mountain will be scattered across the site, and foreign materials removed.

Potential environmental and cultural resource impacts caused by road removal include:

- Public Safety (see Section 4.8.1)
- Wildlife: Sage-Grouse (see Section 4.8.2)
- Livestock (see Section 4.8.3)
- Noxious Weed Control (see Section 4.8.5)
- Dust (see Section 4.8.6)
- Noise (see Section 4.8.7)
- Water Resources (see Section 4.8.8)
- Cultural Resources (see Section 4.8.11)

4.7.2 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/Counties.

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

- Public Safety (see Section 4.8.1)
- Wildlife: Sage-Grouse (see Section 4.8.2)
- Wildlife: Golden Eagles (see Section 4.8.2)
- Wildlife: Migratory Birds (see Section 4.8.2)
- Wildlife: Mule Deer (see Section 4.8.2)
- Livestock (see Section 4.8.3)
- Noxious Weed Control (see Section 4.8.5)
- Dust (see Section 4.8.6)

- Noise (see Section 4.8.7)
- Water Resources (see Section 4.8.8)

4.8 POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES FOR DECOMMISSIONING

4.8.1 Public Safety

Given that the majority of the Project area is 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, RES 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. 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 access roads into the Project area, Monument Springs Road to the north and Old U.S.-93 to the south will be heavily used during decommissioning, the project owner may need to close these roads to the public during decommissioning. 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/Counties to make any necessary changes during the decommissioning period to improve public safety.

Fencing: For those areas where public safety could be endangered, the project owner 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, the project owner will have crews on-site performing the activity and monitoring overall safety. Crew members and safety monitors will 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.

4.8.2 Wildlife

Sage-Grouse

Impacts: The success of the sage-grouse is associated with 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.

Eight existing leks (spring courtship grounds) have been mapped 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. . 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/IDFG for further inspection.

Golden Eagles

Impacts: Golden Eagles are protected under the Bald Eagle Protection Act. Three golden eagle nests are mapped within the boundary of the Project site. 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 vegetation trampling.

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.

4.8.3 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. If any portions of potential 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.

4.8.4 Protected Plant Species

No threatened or endangered species listed by the federal Endangered Species Act are found on the Project.

4.8.5 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. 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 Twin Falls and Elko County Weed Control offices 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 Twin Falls and Elko County Weed Control offices to perform monthly weed surveys on the Project site during the spring and summer months of the decommissioning phase of the Project.

4.8.6 Dust

Impacts: Temporary and localized impacts from dust would occur from the decommissioning phase due to vehicular traffic, grading, and other soil disturbances. Dust generation from decommissioning would not affect county roads or Highway 93 vehicular traffic 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/Counties.

4.8.7 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, RES 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.

4.8.8 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.

4.8.9 Spill Prevention Plan

Impacts: All equipment has the potential to accidentally 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 percent of the full volume of the fuel tank.

Monitoring: The SPCCP will include the spill monitoring protocol.

4.8.10 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(s). 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 Twin Falls or Elko 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.

4.8.11 Cultural Resources

Impacts: Decommissioning of the project could result in impacts to cultural resources of historical significance, as defined by the National Register of Historic Places.

Mitigation: Prior to decommissioning, the approximate boundaries of any eligible cultural resources within the Project area will be plotted on the project civil design drawings. RES will work to avoid any decommissioning activities within these boundaries.

Monitoring: Field personnel will be instructed to watch for potential artifacts, especially in areas in or near identified cultural resource boundaries. If any artifacts are located, decommissioning 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.

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