U.S. Department of the Interior
Bureau of Land Management

Plan of Development (POD)
Revision 4
DOI-BLM-NV-S010-2009-XXXX-POD
March 2011

Searchlight Wind Energy LLC Energy Facility
Clark County, Nevada

APPLICANT

Duke Energy Corporation
71 Allen Street, Suite 101
Rutland, VT 05701-4570
(802) 773-6684

GENERAL LOCATION

The proposed action is generally located near the town of Searchlight Nevada

BLM CASE FILE SERIAL NUMBER(S)

NVN-082626
NEPA LV PROJECT 2008-300

PREPARING OFFICE

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ACRONYMS AND ABBREVIATIONS

Term	Description
ACEC	Paiute-El Dorado Valley Area of Critical Environmental Concern
APE	area of potential effect
BLM	Bureau of Land Management
CCRFCD	Clark County Regional Flood Control District
CFR	Code of Federal Regulations
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
EPAct	Energy Policy Act of 2005
ESA	Endangered Species Act
FAA	Federal Aviation Administration
GIS	geographic information system
GPS	global positioning system
IMACS	Intermountain Antiquities Computer System
kV	kilovolt
mph	miles per hour
MW	megawatt
NAC	Nevada Administrative Code
NAD83	North American Datum of 1983
NDOT	Nevada Department of Transportation
NDOW	Nevada Department of Wildlife
NDWR	Nevada Department of Water Resources
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NNHP	Nevada Natural Heritage Program
NOHA	Determination of No Hazard to Air Navigation
NPUC	Nevada Public Utilities Commission
NRHP	National Register of Historic Places
NRS	Nevada Revised Statute
NVCRIS	Nevada Cultural Resources Information System
O&M	operations and maintenance
PCB	polychlorinated biphenyl
POD	Plan of Development
ROW	right-of-way
RPS	Renewable Portfolio Standard
SCADA	supervisory control and data acquisition
SHPO	Nevada State Historic Preservation Office
SPCCP	Spill Control and Counter Measures Plan
SWPPP	Stormwater Pollution Prevention Plan

ACRONYMS AND ABBREVIATIONS

Term	Description
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
UTM	Universal Transverse Mercator
VRM	BLM Visual Resources Management System
Western	U.S. Department of Energy Western Power Administration
ZVI	zone of visual impact

1.0 PROJECT DESCRIPTION

1.1 INTRODUCTION

Searchlight Wind Energy, LLC, a wholly owned subsidiary of Duke Energy Services, proposes to build and operate the Searchlight Wind Energy, LLC and Energy Facility, a large commercial wind energy project in the vicinity of the town of Searchlight in Clark County, Nevada (Figure 1-1). The project would be constructed entirely on Bureau of Land Management (BLM) lands, and would be administered from the BLM's Las Vegas Field Office. The proposed project consists of the construction of up to 87 2.3 megawatt (MW) wind turbine generators that will provide up to 200 MW of electricity. Other proposed project components include constructing, operating and maintaining construction access roads; constructing and installing overhead and underground electric collector lines; constructing two collection substations; constructing an operations and maintenance (O&M) building; constructing two laydown areas and a power interconnection to the U.S. Department of Energy Western Area Power Administration (Western) switchyard. Searchlight Wind Energy, LLC has applied for an interconnection with Western's transmission system near the corner of Cottonwood Cove Road and the Mead-Davis 230 kilovolt (kV) transmission line.

The proposed Searchlight Wind Energy, LLC and Energy Facility will include :

- Access roads;
- An underground electrical collection system;
- An underground communication lines;
- Up to 87 wind turbine generators, including concrete foundations, tubular steel towers, nacelles (or main turbine body), and blades;
- Up to 87 pad-mounted transformers, one located at the base of the tower of each wind turbine generator;
- An overhead transmission line;
- An O&M building;
- One new electrical interconnection switchyards owned and operated by Western;
- Two onsite electrical substations owned and operated by Searchlight;
- Two laydown yards (one temporary, one permanent); and,
- Four permanent meteorological masts.

The proposed project will be on lands administered by the BLM. Searchlight Wind Energy, LLC has revised this Plan of Development (POD) to reflect minimized impacts on private land affected by the project. The proposed project requires a new right-of-way (ROW) grant for long-term commercial wind energy development pursuant to BLM's Instruction Memorandum 2006-216 dated August 24, 2006 and IM 2009-043 dated December 19, 2008.

This POD is a required component of the accompanying commercial ROW grant application. This POD describes how the project will be built, operated, and decommissioned in a manner consistent with the requirements of the BLM. This POD is a living document that will continue to be refined during BLM's evaluation of this application.

Construction is planned to commence in Spring/Summer 2012 and to continue for eight months. A detailed schedule for the project, including anticipated timelines for permitting, construction and operation and any phased development as appropriate, will be developed during the ***National Environmental Policy Act (NEPA) process and incorporated into this POD.

1.2 PURPOSE AND NEED

This project creates a technically feasible, economically viable, wind-powered electrical generation resource using identified wind resources near the Cottonwood Cove Road power interconnection as proposed by Western in Clark County, Nevada. The project would be a source of environmentally clean, renewable electricity that meets Nevada's growing demand for power while fulfilling the requirements of many state and national renewable energy policies. Searchlight Wind Energy, LLC has identified the project area as suitable for meeting the required development criteria for large-scale wind projects. Western also has the capacity to accept up to 200 MW of electrical supply at the proposed Cottonwood Cove interconnection. All of these factors together enhance the economic viability of the proposed project.

This project supports the requirements of the 2005 Energy Policy Act (EPAct) and addresses Nevada's growing demand for power. It also helps fulfill the requirements of many state and national renewable energy policies. The proposed Searchlight Wind Energy, LLC Energy Facility will be in Clark County, Nevada. Clark County is among the five fastest growing populations in the United States (U.S. Census Bureau, 2007).

In 1997, Nevada passed a Renewable Portfolio Standard (RPS) as part of their 1997 Electric Restructuring Legislation (Assembly Bill 366). It requires any electric providers in the state to acquire actual renewable electric generation or purchase renewable energy credits so that each utility had 1% of total consumption in renewables. On June 8, 2001, Nevada Governor Kenny Guinn signed Senate Bill 372. This law requires that 15% of all electricity generated in Nevada be derived from new renewable sources by 2013. This law phases in Nevada's renewable energy commitment so that there are 5% new renewables in the year 2003, 7% in 2005, 9% in 2007, 11% in 2009, 13% in 2011, and 15% in 2013.

In June 2005, the Nevada legislature passed Assembly Bill 03 during a special legislative session that modified the 1997 Nevada RPS. This bill extended the deadline and raised the requirements of the RPS to 20% of sales by 2015. This legislative requirements coupled with federal tax incentives has created a high demand for renewable energy throughout Nevada.

On August 8, 2005, President Bush signed the EPAct. Section 211 of the EPAct calls for the Secretary of the Interior to approve non-hydropower renewable energy projects with a generation capacity of at least 10,000 MWs of electricity, located on public lands before the end of the 10-year period beginning on the August 8, 2009 enactment of EPAct.

The Searchlight, Nevada vicinity is identified as an area of significant wind resource potential by the National Renewable Energy Laboratory wind map for the state of Nevada. Wind energy testing with onsite meteorological towers is being conducted in the area proposed for development. By using sites with excellent wind potential, Nevada RPS requirements can be met most cost-effectively and with a smaller number of projects.

Executive Order 13212 requires all federal agencies to streamline their internal processes for approving energy related projects. The EPAct directs the Department of the Interior, of which the BLM is a part, to take actions to promote the development of domestic renewable energy supplies.

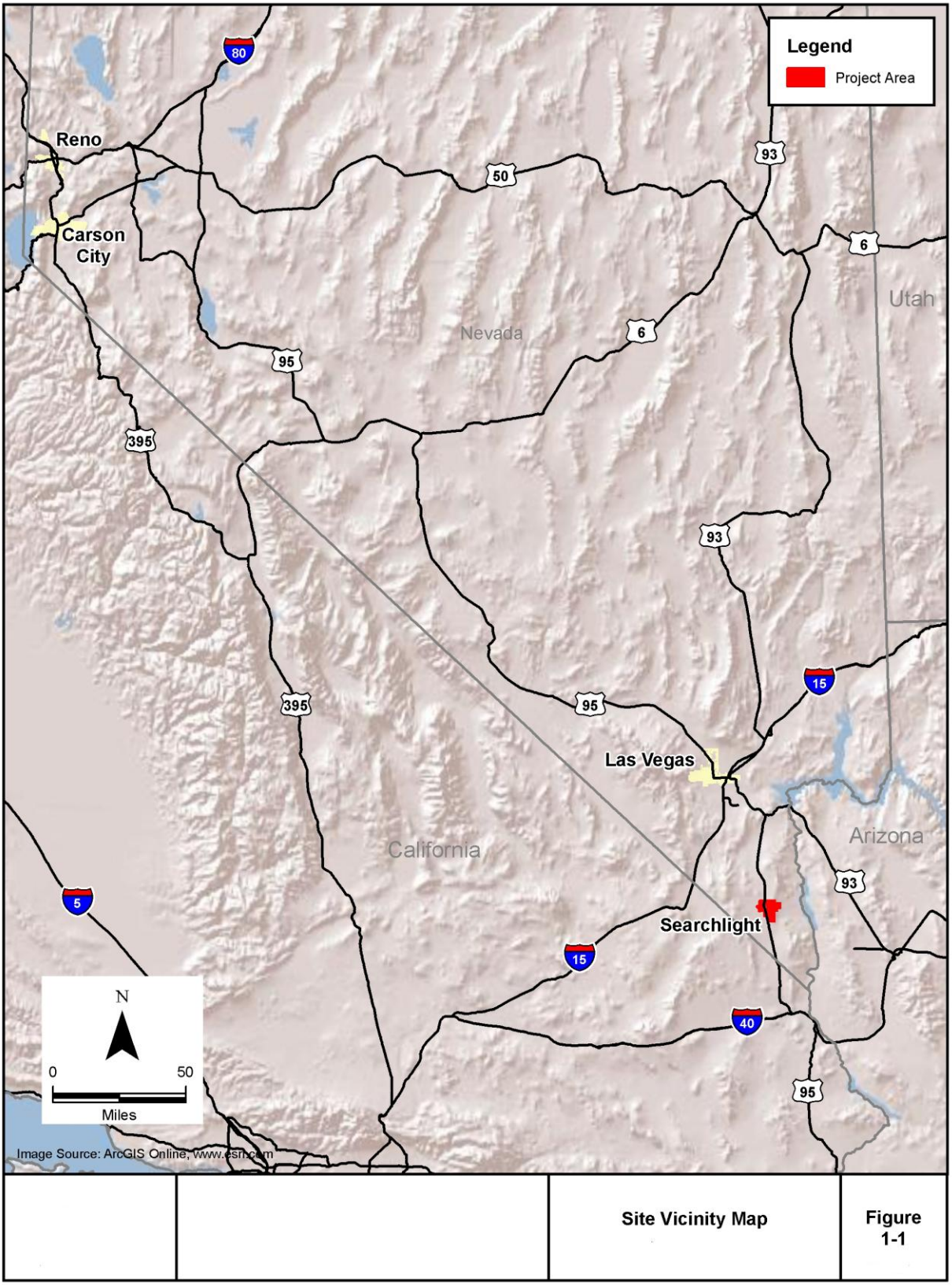

Figure 1-1. Site Vicinity Map.

Wind is a domestic and local energy source and the Searchlight Wind Energy, LLC Energy Facility will contribute to domestic energy security; unlike oil, gas, and coal reserves, wind supplies not diminish over time. Wind generation produces electricity without consuming fossil fuels or water and does not produce air emissions, water effluent, or hazardous waste. When the wind blows and electricity is generated by a wind facility, it typically displaces energy from other facilities that generate fossil fuel power. To maintain balance between the supply and demand for electricity, real-time output required from fossil fuel plants must be directly reduced by the amount of renewable generation going into the electrical grid. Based on an average capacity factor of 29%, the Searchlight Wind Energy, LLC Energy Facility will result in an approximate savings of 380,000 tons of carbon dioxide, 600 tons of nitrogen oxide, and 400 tons of sulfur dioxide per year compared with electricity generated by the average fuel mix for the region (U.S. Department of Transportation, 2007).

1.3 GENERAL FACILITY DESCRIPTION

Searchlight Wind Energy, LLC proposes an approximately 200 MW wind energy facility, consisting of up to 87 Siemens 2.3 MW (or similar) wind turbine generators (Figure 1-2). The project will provide enough electricity for the residential electric needs of over 60,000 households (American Wind Energy Agency, 2007). Neither the brand nor the manufacturer of wind turbine generator that will be used on the project has been confirmed at this time. When the project proceeds to the point where it is appropriate to order wind turbine generators, a particular brand, model, and MW capacity will be selected. Selection will be based on the specifications of the model that best meets site-specific wind speeds and patterns at Searchlight that can be manufactured and delivered to meet the project construction schedule, and is the most cost-effective to the applicant.

The proposed Searchlight Wind Energy, LLC Energy Facility project would interconnect with Western's 230 kV transmission line. A feasibility study for this interconnection has been completed and System Impact Study Agreement has been executed.

Searchlight Wind Energy, LLC Energy Facility's proposed turbine towers will be approximately 262 feet tall (hub height). The blades of the proposed turbines will extend an additional 153 feet above the hub, for a total tip height of 427 feet above existing grade.

Wind turbine generators and other facilities will be placed in locations that maximize energy production while minimizing environmental impacts. Safety during construction, O&M are also considered during siting. Section 2.0 provides additional detail on the components of the project, including site layout. The proposed project will comply with the requirements of the BLM ROW grant, including any required monitoring during construction, O&M, and decommissioning.

1.3.1 Project Location, Land Ownership, and Jurisdiction

Searchlight Wind Energy, LLC proposes placing up to 87 Siemens 2.3 MW or similar wind turbine generators in the Searchlight vicinity within the area under an ROW grant from the BLM for wind energy monitoring and testing (see Table 1-1 and Table 1-2). All of the 87 proposed wind turbine generators will be sited on BLM-administered lands.

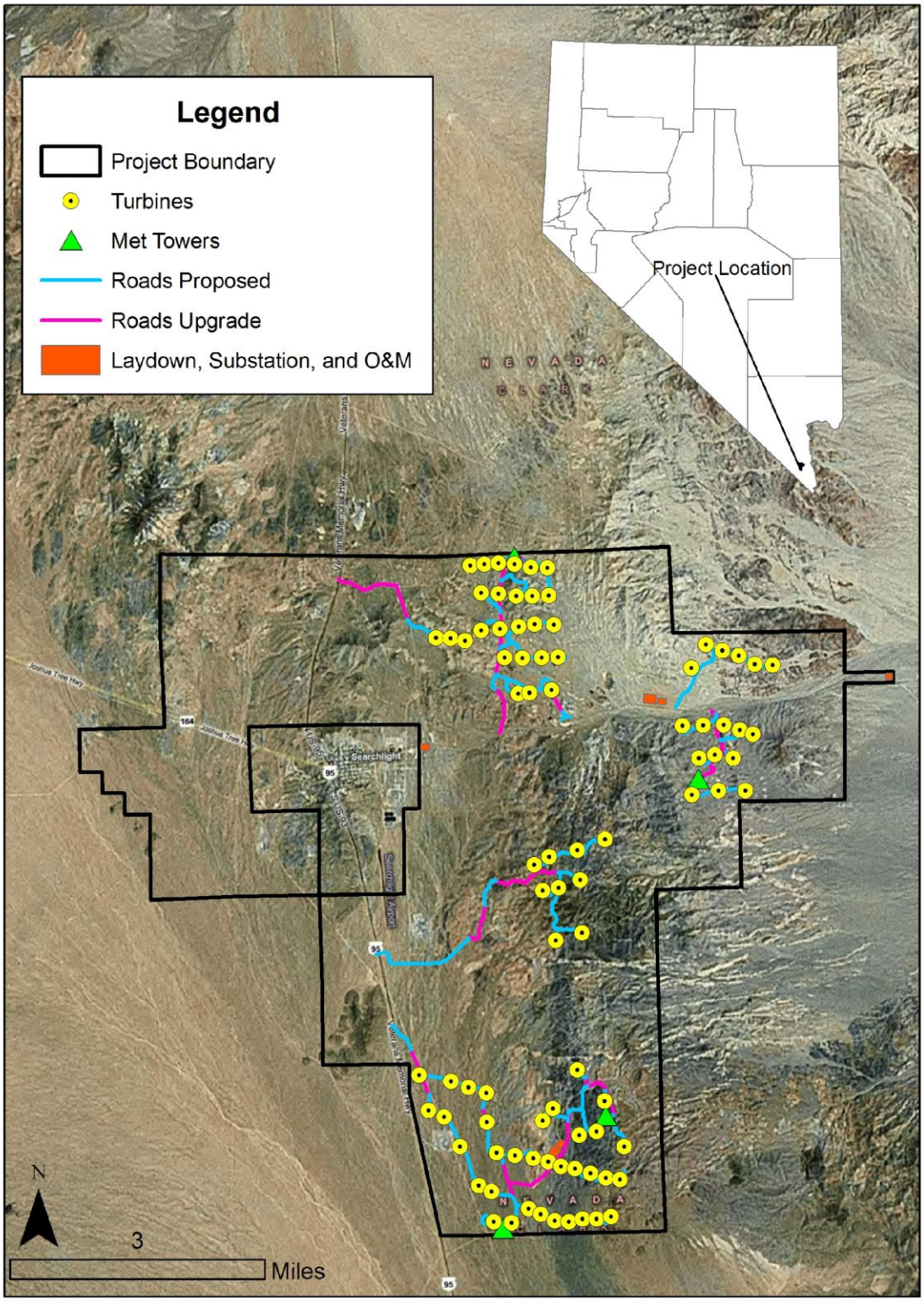

Figure 1-2. Site Layout Map.

Table 1-1. Proposed Turbine Locations by Section and Part.

Proposed Turbine 2/20/2011	UTM (meters)		UTM (feet)		Latitude	Longitude	Township	Range	Section	¼ Section
	Easting	Northing	Easting	Northing						
1	691442	3930425	2268505.96	12895069.35	N35° 29' 56.214"	W114° 53' 21.505"	28	63	24	NE
2	691714	3930446	2269398.35	12895138.25	N35° 29' 56.706"	W114° 53' 10.698"	28	63	24	NE
3	691980	3930466	2270271.05	12895203.87	N35° 29' 57.170"	W114° 53' 0.130"	28	63	24	NE
4	692280	3930450	2271255.30	12895151.37	N35° 29' 56.442"	W114° 52' 48.244"	28	64	19	NW
5	692590	3930391	2272272.36	12894957.81	N35° 29' 54.312"	W114° 52' 35.997"	28	64	19	NW
6	692899	3930382	2273286.14	12894928.28	N35° 29' 53.804"	W114° 52' 23.748"	28	64	19	NE
7	691648	3929909	2269181.81	12893376.44	N35° 29' 39.333"	W114° 53' 13.773"	28	63	24	NE
8	691979	3929887	2270269.20	12893304.69	N35° 29' 38.393"	W114° 53' 0.645"	28	63	24	NE
9	692313	3929845	2271363.57	12893166.47	N35° 29' 36.794"	W114° 52' 47.450"	28	64	19	SW
10	692621	3929849	2272374.06	12893179.59	N35° 29' 36.709"	W114° 52' 35.231"	28	64	19	SW
11	692928	3929854	2273381.28	12893196.00	N35° 29' 36.656"	W114° 52' 23.049"	28	64	19	SE
12	690795	3929056	2266383.26	12890577.89	N35° 29' 12.255"	W114° 53' 48.328"	28	63	24	SW
13	691067	3929046	2267275.65	12890545.08	N35° 29' 11.742"	W114° 53' 37.549"	28	63	24	SW
14	691347	3928998	2268194.28	12890387.60	N35° 29' 9.991"	W114° 53' 26.484"	28	63	25	SW
15	691646	3929192	2269175.25	12891024.09	N35° 29' 16.076"	W114° 53' 14.461"	28	63	24	SE
16	692006	3929220	2270355.19	12891115.28	N35° 29' 16.728"	W114° 53' 0.173"	28	63	24	SE
17	692358	3929263	2271509.85	12891257.65	N35° 29' 17.890"	W114° 52' 46.178"	28	64	19	SW
18	692666	3929310	2272521.32	12891409.71	N35° 29' 19.179"	W114° 52' 33.911"	28	64	19	SW
19	693026	3929300	2273702.56	12891377.03	N35° 29' 18.604"	W114° 52' 19.640"	28	64	19	SE
20	692091	3928680	2270635.22	12889344.30	N35° 28' 59.159"	W114° 52' 57.248"	28	64	30	NW
21	692431	3928674	2271751.98	12889324.58	N35° 28' 58.726"	W114° 52' 43.753"	28	64	30	NW
22	692799	3928682	2272958.87	12889350.61	N35° 28' 58.727"	W114° 52' 29.158"	28	64	30	NE
23	693104	3928688	2273958.74	12889372.17	N35° 28' 58.727"	W114° 52' 17.066"	28	64	30	NE
24	692351	3927998	2271488.24	12887106.77	N35° 28' 36.855"	W114° 52' 47.517"	28	64	30	SW
25	692568	3928016	2272200.18	12887165.83	N35° 28' 37.287"	W114° 52' 38.897"	28	64	30	SW

Table 1-1. Proposed Turbine Locations by Section and Part.

Proposed Turbine 2/20/2011	UTM (meters)		UTM (feet)		Latitude	Longitude	Township	Range	Section	¼ Section
	Easting	Northing	Easting	Northing						
26	692987	3928070	2273574.85	12887342.99	N35° 28' 38.746"	W114° 52' 22.235"	28	64	30	SE
27	695633	3928485	2282255.93	12888704.54	N35° 28' 50.345"	W114° 50' 36.947"	28	64	28	NW
28	695911	3928930	2283168.01	12890164.51	N35° 29' 4.582"	W114° 50' 25.537"	28	64	28	NW
29	696220	3928815	2284183.10	12889785.65	N35° 29' 0.617"	W114° 50' 13.367"	28	64	28	NE
30	696532	3928719	2285205.40	12889472.25	N35° 28' 57.296"	W114° 50' 1.093"	28	64	28	NE
31	696839	3928556	2286212.18	12888938.18	N35° 28' 51.797"	W114° 49' 49.065"	28	64	28	NE
32	697174	3928537	2287312.31	12888875.58	N35° 28' 50.939"	W114° 49' 35.784"	28	64	27	NW
33	695466	3927388	2281708.03	12885105.46	N35° 28' 14.879"	W114° 50' 44.520"	28	64	33	NW
34	695856	3927400	2282987.56	12885144.83	N35° 28' 14.992"	W114° 50' 29.045"	28	64	33	NW
35	696248	3927410	2284273.65	12885177.64	N35° 28' 15.038"	W114° 50' 13.493"	28	64	33	NE
36	696552	3927314	2285271.02	12884862.68	N35° 28' 11.708"	W114° 50' 1.523"	28	64	33	NE
37	696802	3927234	2286091.23	12884600.21	N35° 28' 8.935"	W114° 49' 51.680"	28	64	33	NE
38	695772	3926775	2282711.97	12883094.31	N35° 27' 54.779"	W114° 50' 32.918"	28	64	33	NW
39	696081	3926837	2283725.75	12883297.72	N35° 27' 56.570"	W114° 50' 20.612"	28	64	33	NW
40	696429	3926778	2284867.48	12883104.15	N35° 27' 54.409"	W114° 50' 6.866"	28	64	33	NE
41	695646	3926080	2282298.58	12880814.13	N35° 27' 32.324"	W114° 50' 38.515"	28	64	33	SW
42	696146	3926163	2283939.00	12881086.44	N35° 27' 34.662"	W114° 50' 18.620"	28	64	33	SW
43	696654	3926161	2285605.66	12881079.88	N35° 27' 34.236"	W114° 49' 58.482"	28	64	33	SE
44	692653	3924757	2272479.05	12876473.59	N35° 26' 51.513"	W114° 52' 38.305"	29	64	6	SE
45	692934	3924906	2273400.96	12876962.43	N35° 26' 56.150"	W114° 52' 27.039"	29	64	6	SE
46	693470	3925030	2275159.49	12877369.26	N35° 26' 59.797"	W114° 52' 5.685"	29	64	5	SW
47	693999	3925241	2276895.05	12878061.51	N35° 27' 6.271"	W114° 51' 44.533"	29	64	5	NW
48	692811	3924267	2272997.42	12874865.98	N35° 26' 35.508"	W114° 52' 32.460"	29	64	6	SE
49	693114	3924324	2273991.51	12875052.99	N35° 26' 37.145"	W114° 52' 20.400"	29	64	6	SE
50	693525	3924474	2275339.94	12875545.11	N35° 26' 41.723"	W114° 52' 3.980"	29	64	5	SW

Table 1-1. Proposed Turbine Locations by Section and Part.

Proposed Turbine 2/20/2011	UTM (meters)		UTM (feet)		Latitude	Longitude	Township	Range	Section	¼ Section
	Easting	Northing	Easting	Northing						
51	693064	3923327	2273827.47	12871782.00	N35° 26' 4.839"	W114° 52' 23.233"	29	64	7	SE
52	693558	3923466	2275448.20	12872238.03	N35° 26' 9.003"	W114° 52' 3.535"	29	64	8	SW
53	693469	3920872	2275156.21	12863727.55	N35° 24' 44.921"	W114° 52' 9.280"	29	64	20	NW
54	693992	3920287	2276872.09	12861808.27	N35° 24' 25.579"	W114° 51' 49.058"	29	64	20	NW
55	694362	3919424	2278085.99	12858976.91	N35° 23' 57.325"	W114° 51' 35.138"	29	64	29	NE
56	692815	3919911	2273010.55	12860574.67	N35° 24' 14.204"	W114° 52' 36.012"	29	64	19	SE
57	693006	3920143	2273637.18	12861335.83	N35° 24' 21.597"	W114° 52' 28.247"	29	64	19	SE
58	693511	3919637	2275294.01	12859675.72	N35° 24' 4.831"	W114° 52' 8.671"	29	64	20	SW
59	693839	3919706	2276370.12	12859902.10	N35° 24' 6.839"	W114° 51' 55.617"	29	64	20	SW
60	690474	3920768	2265330.21	12863386.00	N35° 24' 43.622"	W114° 54' 8.041"	29	63	24	NW
61	691081	3920655	2267321.58	12863015.61	N35° 24' 39.542"	W114° 53' 44.086"	29	63	24	NW
62	691406	3920544	2268387.85	12862651.44	N35° 24' 35.716"	W114° 53' 31.302"	29	63	24	NE
63	691742	3920431	2269490.21	12862280.71	N35° 24' 31.818"	W114° 53' 18.084"	29	63	24	NE
64	691754	3919882	2269529.58	12860479.53	N35° 24' 14.001"	W114° 53' 18.073"	29	63	24	SE
65	691941	3919307	2270143.10	12858593.05	N35° 23' 55.219"	W114° 53' 11.151"	29	64	30	NW
66	692289	3919253	2271284.83	12858415.88	N35° 23' 53.226"	W114° 52' 57.410"	29	64	30	NW
67	692637	3919197	2272426.56	12858232.16	N35° 23' 51.167"	W114° 52' 43.671"	29	64	30	NW
68	692918	3919133	2273348.47	12858022.18	N35° 23' 48.896"	W114° 52' 32.593"	29	64	30	NE
69	693161	3919045	2274145.71	12857733.47	N35° 23' 45.872"	W114° 52' 23.042"	29	64	30	NE
70	693430	3919000	2275028.26	12857585.83	N35° 23' 44.224"	W114° 52' 12.423"	29	64	30	NE
71	693723	3918910	2275989.54	12857290.56	N35° 23' 41.100"	W114° 52' 0.893"	29	64	29	NW
72	694015	3918824	2276947.55	12857008.41	N35° 23' 38.106"	W114° 51' 49.399"	29	64	29	NW
73	694284	3918801	2277830.09	12856932.95	N35° 23' 37.171"	W114° 51' 38.762"	29	64	29	NW
74	690648	3920101	2265900.98	12861198.03	N35° 24' 21.869"	W114° 54' 1.709"	29	63	24	SW
75	690944	3919983	2266872.90	12860810.90	N35° 24' 17.837"	W114° 53' 50.071"	29	63	24	SW

Table 1-1. Proposed Turbine Locations by Section and Part.

Proposed Turbine 2/20/2011	UTM (meters)		UTM (feet)		Latitude	Longitude	Township	Range	Section	¼ Section
	Easting	Northing	Easting	Northing						
76	691249	3919424	2267872.76	12858976.91	N35° 23' 59.494"	W114° 53' 38.468"	29	63	24	SE
77	691606	3918678	2269044.02	12856529.40	N35° 23' 35.047"	W114° 53' 24.955"	29	63	25	SE
78	691841	3918570	2269815.01	12856175.07	N35° 23' 31.381"	W114° 53' 15.737"	29	63	25	SE
79	692546	3918247	2272128.00	12855115.37	N35° 23' 20.414"	W114° 52' 48.083"	29	64	30	SW
80	692779	3918140	2272892.44	12854764.32	N35° 23' 16.781"	W114° 52' 38.944"	29	64	30	SE
81	693048	3918016	2273774.98	12854357.49	N35° 23' 12.572"	W114° 52' 28.394"	29	64	30	SE
82	693315	3917996	2274650.96	12854291.88	N35° 23' 11.736"	W114° 52' 17.835"	29	64	30	SE
83	693569	3918049	2275484.29	12854465.76	N35° 23' 13.278"	W114° 52' 7.729"	29	64	29	SW
84	693841	3918047	2276376.68	12854459.20	N35° 23' 13.023"	W114° 51' 56.956"	29	64	29	SW
85	694116	3918095	2277278.91	12854616.68	N35° 23' 14.387"	W114° 51' 46.022"	29	64	29	SW
86	691892	3917996	2269980.85	12854290.38	N35° 23' 12.712"	W114° 53' 14.221"	29	64	30	SW
87	692229	3917979	2271088.65	12854236.92	N35° 23' 11.949"	W114° 53' 0.859"	29	64	30	SW

UTM = Universal Transverse Mercator

1.3.2 Legal Land Description of Facility

The legal land description of the project site is expected to be modified during the NEPA process and will be incorporated into this POD.

1.3.3 Total Acreage and General Dimensions of All Facilities and Components

Based on the geographic information system (GIS) analysis of project components shown in Figure 1-2, construction activities will encompass approximately 378 acres of disturbance, including approximately 163 acres of permanent disturbance and approximately 215 net acres of temporary disturbance. Table 1-2 identifies the permanent and temporary construction-related disturbance areas organized by project facility. The exact areas of each component are subject to change as the project design develops.

Table 1-2. Roads and Crane Tracks on Public Lands.

Roads and Crane Tracks on Public Land	
Project roads total (in miles)	36.7
Existing (modified to 16 feet width)	0.5
Existing (modified to 36 feet width)	8.7
New (16 feet width)	1.7
New (36 feet width)	25.8
Permanent road width – 16 feet. Side slopes restored. Side slope variable form flat to 2H:1V	

Based on the GIS mapping, lands covered by the commercial wind energy ROW Grant covers 26,000 acres or approximately 40 square miles. The total area estimated to be used by the project (all facilities and temporary disturbance) is approximately 0.60 square miles, or approximately 1.5% of the total ROW. The permanent footprint of the proposed Searchlight Wind Energy, LLC Energy Facility will constitute 0.63% of the ROW.

1.3.4 Number and Size of Wind Turbines

Searchlight Wind Energy, LLC proposes to place up to 87 Siemens 2.3 MW or similar wind turbine generators. Fully enclosed conical steel tubular towers 262 feet tall will support the turbines and will contain the electronic power and control systems. Maximum tower plus blade height would be 427 feet.

1.3.5 Wind Turbine Configurations and Layout

The wind turbine generators are proposed to run in arrays generally oriented in an east-to-west direction on flat lands and ridgelines to maximize the use of the prevailing southerly and southwesterly winds in the area. In addition to wind turbine generators, the proposed project will require upgrading and constructing new access roads, an overhead transmission line, two electrical substations, an electrical interconnection facility/switchyard, an O&M building, and laydown yards that may also serve as batch plant locations during construction. Each wind turbine generator will have a pad-mounted transformer at the base of the wind turbine generator tower and an underground electrical and communication line. Six permanent meteorological masts will be installed to measure wind speed and direction across the site to compare turbine performance to measured wind speeds over the life of the project. The site layout map in Figure 1-2 shows the location of each wind turbine, substation, road, and ancillary project facilities.

1.3.6 Substations, Transmission Lines, Access Roads, Buildings, Parking Areas

Overhead Distribution/Transmission Lines

An aboveground 230 kV overhead transmission line is proposed between the project electrical substations and the electrical interconnection facility/switchyard to connect with Western's 230 kV Mead–Davis transmission line east of the ROW. The project's overhead transmission line will be 8.7 miles long and will be routed across BLM lands. The transmission line will follow the route shown on the site layout map in Figure 1-2, and will run from west to east through sections:

- T28S, R63E, Sections 26, 27, 28, 29, 32 and 33
- T29S, R64E, Sections 4, 5, 8, 17, 19 and 20

The overhead transmission line will consist of electric cable strung from poles or lattice towers (Figure 3-1). The transmission line and poles will include devices to prevent raptor perching. The overhead transmission line will be accessed and installed by truck. A temporary at-grade road will be constructed parallel to the transmission line and the site will be restored upon completion.

Roads

The project will use existing federal, state, county, and local public roads, as well as new roads constructed specifically for the project. The proposed road network, including the two primary access points, is shown on the Site Layout Map in Figure 1-2. Figure 1-2 identifies existing roads proposed for upgrading to support the transport of project facility components, as well as new roads proposed for turbine access and long-term O&M. Primary access to the project will be via U.S. Highway 95 and Nevada State Highway 164. In addition to these primary access routes, turbines and other project facilities will be accessed via upgraded existing roads and new access roads. The project will require upgrades to existing roads on approximately 9.2 miles of BLM land. The project will also require new roads or crane tracks on approximately 27.5 miles of BLM land. An additional 0.5-mile segment of crane track will also be required across BLM land, but it will be decommissioned after facility construction is complete. Some existing roads needed for turbine construction will be upgraded to 36 feet wide and new roads will be constructed to 36 feet wide so that the turbine erection crane can crawl to each turbine location. It is likely that multiple cranes will be used to expedite facility construction. Regardless of the number of cranes used, each will be broken down for transport across U.S. Highway 95 and State Highway 164.

Roads will be rough graded and consist of approximately 6 inches of aggregate road base over compacted native material. Figure 1-3 shows typical road design and disturbed areas. Excess soil not used as road fill will be stored on site and made available for sale. Culverts will be installed in drainages to prevent washouts. Upon completion of construction, roads will be reduced to 16 feet for O&M access. The remainder of the 36-foot-wide road will be restored to reduce permanent impacts.

During operations, roads will be inspected at least twice annually. Periodic grading and placement of aggregate base may be required to maintain road quality. Road maintenance will be scheduled during times of low or no wind to minimize airborne dust. Speed limits of 20 miles per hour (mph) will be posted and enforced on all project roads. To minimize airborne dust and erosion, all O&M vehicles will be required to obey the established speed limit.

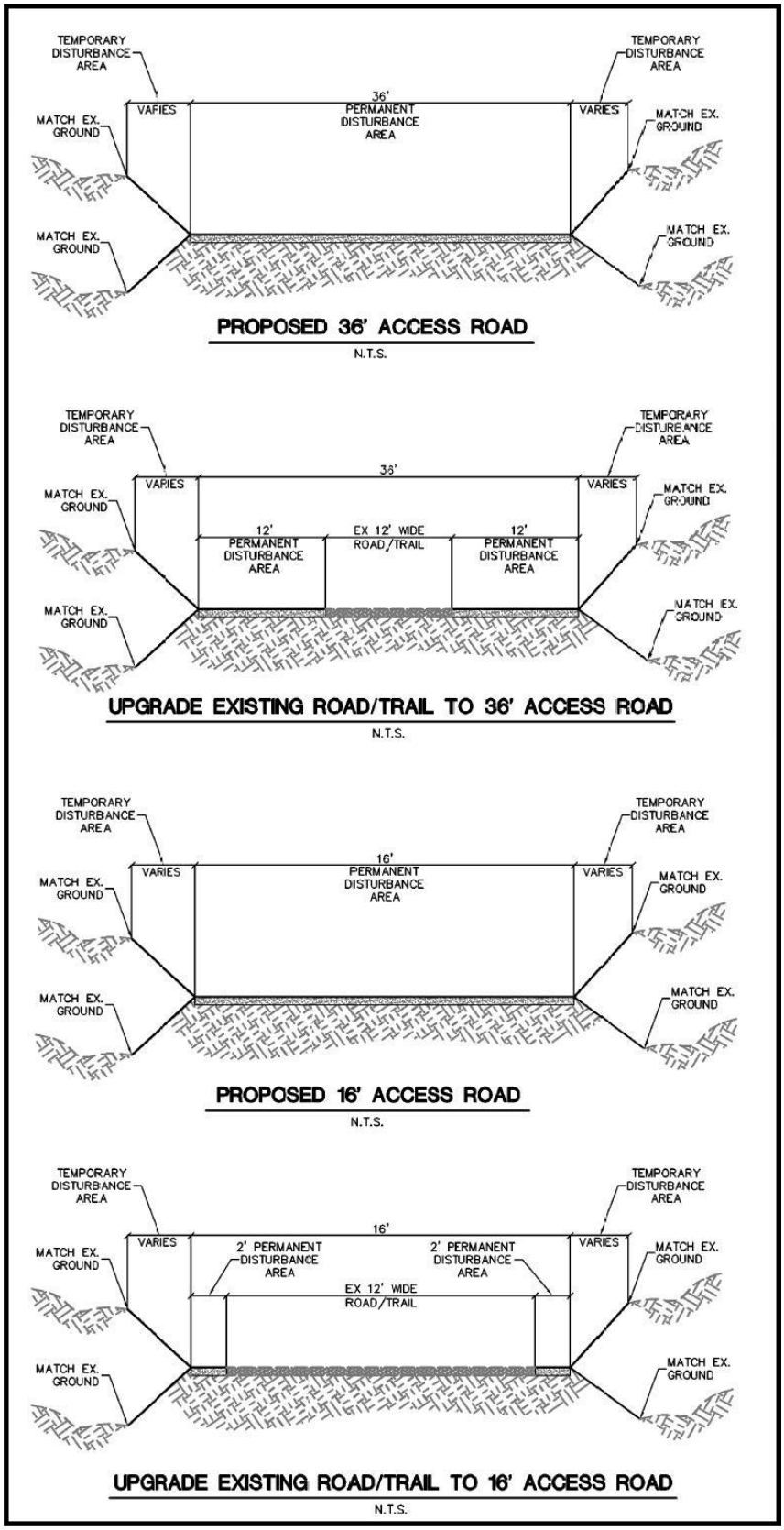

Figure 1-3. Typical Road Design.

Underground Communication Lines

The wind turbine generators will be operated by a supervisory control and data acquisition (SCADA) system in the control panel inside the tower of each wind turbine generator. Each turbine is connected via fiber optic cable to a central computer in the project O&M building. The wind turbine generators can be controlled on site or remotely, and data may also be accessed remotely. The fiber optic communications cable will be collocated with the electrical collection system to reduce environmental impacts. Where feasible, collection cabling and communication lines will be collocated with roads to further reduce environmental impacts.

The building and parking area are described in the next section.

1.3.7 Ancillary Facilities

Operations and Maintenance Building

The O&M building (Figure 1-4) will be constructed of composite panels, and will be approximately 140 feet by 60 feet inside a compound of approximately 5 acres. It will contain offices and house the control system for the wind turbine generators, spare parts, consumables, and tools. Maintenance trucks will park adjacent to the O&M building. Portable water supplies will be used in the building, and sewage disposal will be by means of an onsite septic tank. Telecommunications lines and the SCADA system will also be installed inside the O&M building.

Figure 1-4. Typical O&M Building.

1.3.8 Temporary Construction Workspace, Yards, Staging Areas

Laydown Yards

Two laydown yards will be required near the proposed electrical substation locations, as shown on the site plan in Figure 1-2. Access to the laydown yards will be via existing but upgraded roads leading from U.S. Highway 95 north of Searchlight and State Highway 164 east of Searchlight. The locations of the two access points are shown on Figure 1-2. The laydown yard near substation 1 will be temporary and used during construction only. The laydown yard near substation 2 will also be used for extra storage and spare

parts during the life of the project. Each laydown yard will be approximately 10 acres and may be fenced for security for the duration of its use.

Laydown Areas/Concrete Batch Plants

During construction, construction equipment, cable, foundation parts, components, towers, blades, nacelles, etc., may be temporarily stored either at one of the two laydown yards, as shown on the site layout map in Figure 1-2, or at the base of each wind turbine generator location. The equipment will be supported on wooden frames, pallets, or straw bales, which will be placed on the ground while turbine components are loaded, pre-assembled, and await installation. Areas of sensitive habitat will be fenced off with caution tape to prevent damage.

Unless a local concrete batch plant is available during construction, concrete for foundations will be mixed at mobile batch plants located in the laydown yards shown on Figure 1-2. If concrete is mixed at mobile batch plants, cement, water, and aggregate will also be staged in the laydown yards.

1.3.9 Water Usage, Amounts, and Sources

The project will use water from onsite sources, if feasible, for dust suppression, concrete mixing during construction, and for operations personnel use in the O&M facility. If onsite sources are not available, the project will import water from other off-site local sources. Additional information regarding water sources, uses, and amounts will be added to this section during the NEPA process.

1.3.10 Erosion Control and Stormwater Drainage

All project construction will follow site-specific soil erosion and sediment control measures described in a Stormwater Pollution Prevention Plan (SWPPP) prepared and implemented in accordance with Nevada Division of Environmental Protection Storm Water General Permit NVR10000.

1.3.11 Vegetation Treatment, Weed Management, and Any Proposed Use of Herbicides

Vegetation

Prior to the start of construction, Searchlight Wind Energy, LLC will review and document the general condition of the site, including the types and abundance of vegetation and areas of existing disturbance. A licensed surveyor will survey and stake all road and turbine locations before construction begins.

Noxious Weeds

Noxious weeds are defined by the State of Nevada as "Any species of plant which is, or liable to be, detrimental or destructive and difficult to control or eradicate..." (Nevada Revised Statute [NRS] 555.005). The noxious weed species of primary interest to the BLM Las Vegas Field Office are listed in Table 5-3.

No noxious weeds were identified during an initial field survey associated with meteorological tower ROW permitting. However, the potential for noxious weed seed transport and establishment exists during all construction activities where vehicles traverse lands free of noxious weeds after traversing other lands with noxious weeds.

Based on the BLM Las Vegas Field Office's Noxious Weed Plan, a project-specific Noxious Weed Plan will be established in future development efforts and will be included with the Construction Mitigation

and Restoration Plan in the Environmental Compliance Plan. The plan will include project-specific stipulations that will attempt to control the establishment and spread of Nevada-listed noxious weeds that may result from construction and operation of the proposed wind energy facility.

Pesticides, Herbicides, and other Chemical Control Procedures

There is no identified need for the use of chemical control procedures during construction. If any pesticides or herbicides are required during operation, their use will be agreed upon by the BLM and Clark County.

1.3.12 Waste and Hazardous Materials Management

Each contractor employed during construction of the wind energy facility will provide a log of potentially hazardous materials stored or used on site and maintain a summary log. The log will be a living document and continuously updated throughout operation of the project and during decommissioning.

The summary hazardous materials log will be on file in the project's construction trailers (during construction) and the O&M building (during operation), and will be provided to local fire departments and emergency service providers.

1.3.13 Fire Protection

No open burning will be permitted during construction or operation.

Due to their height, physical dimensions, and complexity, wind turbine generators may present response difficulties to local emergency service providers and fire departments. Although the turbines contain few flammable components, electrical-generating equipment and electrical cables, along with various oils (lubricating, cooling, and hydraulic) create the potential for fire or a medical emergency in a tower or nacelle. These elements, in combination with the elevated location of a nacelle and enclosed space of a tower interior, makes response to a fire or other emergency difficult and beyond the capabilities of most local fire departments and emergency service providers.

The presence of potentially hazardous materials as well as high-voltage electrical equipment at other locations on the project site pose potential safety risks to local emergency responders. Project components create the potential for a fire or medical emergency due to the storage and use of diesel fuels, lubricating oils, and hydraulic fluids. Storage and use of these substances may occur at the substation, in electrical transmission structures, at staging area(s), or in the O&M building/facility. However, due to the accessibility of these areas, response to an emergency should not be difficult for local fire and emergency personnel.

During construction, fire prevention will be managed via an emergency plan. Searchlight Wind Energy, LLC has documented safety procedures in place to manage work situations where fire presents a safety hazard. Searchlight Wind Energy, LLC or its contractors will perform safety audits at least once a week during construction to inspect the site for adequate provision of fire extinguishers and other safety devices.

During operations, the O&M contractor will ensure that there are sufficient fire extinguishers and other safety devices deployed in the bases and nacelles of the wind turbine generators, in the O&M building, and at the substations.

1.3.14 Proposed Site Security and Fencing

The proposed O&M building, laydown yards, substations, and interconnection area will be fenced and gated for safety and security. Because of the existing road and trail network and the open accessibility to public land, it will not be possible to prevent public access to the ROW. However, warning signs, flaggers in high-traffic areas, and security personnel at turbine sites will be employed during construction for the safety of the public and construction workers, and for general security at active work areas.

Temporary warning fences will be erected as needed in areas where public safety risks might exist and where site personnel will not be available to control public access (such as at excavated foundation holes and electrical collection system trenches). Permanent fencing will be installed around the permanent laydown yard, the O&M building site, the two project electrical substations, and the electrical interconnection facility/switchyard. Other areas considered hazardous, or where issues with security or theft may be of concern, might also be fenced. Searchlight Wind Energy, LLC will coordinate fencing efforts with the BLM.

Temporary fencing around unfinished turbine bases and excavations is designed primarily to warn people of the potential danger; this fencing is typically high-visibility plastic mesh. Permanent fencing will be chain link with locked gates.

1.3.15 Electrical Component

Energy generated by the wind turbine generators will be delivered to two project electrical substations via the underground collection system. At the substations, transformers will increase the voltage of the energy from the collection system level of 34.5 kV to the transmission level of 230 kV. Capacitor banks and other equipment may be installed at the substations to provide the voltage support necessary to meet interconnection requirements for the project (as yet unknown). A small control building at each substation will house electrical metering equipment.

1.3.16 Interconnection with Electrical Grid

Other projects are proposed concurrently with this wind energy facility project to complete power connections for the overall Searchlight Wind Energy, LLC Energy Facility project.

Concurrent with this POD, Western has filed a POD for the Searchlight Substation for the construction, operation, and maintenance of the Western Searchlight Substation and associated station service line (34.5 kV) which are a part of the Searchlight Wind Energy, LLC Project (NVN-084626). A new perpetual ROW grant would be required for Western's Searchlight Substation, access road, and the 34.5 kV station service line, or the existing ROW grant (CC-024550) would be amended to include these facilities. Western is a cooperating agency with BLM as the lead Federal Agency to prepare the Searchlight Wind Energy, LLC Generation Project Environmental Impact Statement (EIS), expected to be published in 2010. All requirements of the EIS and mitigation actions would be adhered to for Western's portion of the project.

The Western Searchlight Substation will be approximately 370 feet by 540 feet and cover 4.6 acres. Approximately 3.8 acres will be fenced for a gravel-based substation yard. Sufficient yard area inside the fence is required to place a control building, power circuit breaker, interrupt switches, disconnecting switches, reactors, instrument transformers, and other miscellaneous electrical equipment and materials to transform, switch, meter and transfer electric power. The fence will provide security and protection for the yard and associated electrical equipment. The entrance to the yard is through double locking gates. The station service line will exit the substation from the north for approximately 1,000 feet within the

ROW width of 50 feet. Structures will be constructed of tubular steel and range from 10 feet to 60 feet high. Access to the yard will be via a dirt road extending from Nevada State Highway 164 and Cottonwood Cove Road.

1.3.17 Spill Prevention

Wind turbines typically use lubricating oils and greases, none of which contain any compounds listed as hazardous by the U.S. Environmental Protection Agency (EPA). These oils and greases are used in moderate quantities and are contained entirely within the turbine spill trap and nacelle, so the possibility for accidental leakage is minimal. Lubricating oils are checked quarterly and filled and changed as needed. Spent oils are recycled with a certified waste contractor. Oil changes will be performed up-tower, any accidental spills will be contained by the nacelle.

Small quantities of oils and greases will be stored in the O&M building on site in special containers. All special wastes, including waste oils and contaminated rags, will be removed from the site using a controlled waste manifest. All waste materials will be disposed of via a licensed waste carrier, who will deliver materials to a licensed waste disposal site.

Transformers will contain cooling oil that does not contain polychlorinated biphenyls (PCBs). Inspections will be performed on a regular basis at each transformer to detect and prevent leaks.

Construction equipment and O&M trucks will be maintained at all times to minimize any leaks of motor oils, hydraulic fluids, or fuels. All vehicle maintenance will be performed off site at an appropriate facility. An environmentally benign detergent will be used to remove wind-carried particulate matter from internal and external turbine mechanisms.

All production, use, storage, transport, and disposal of hazardous materials as a result work or energy generation on the project will be in strict accordance with federal, state, and Clark County regulations and guidelines. No extremely hazardous materials (40 Code of Federal Regulations [CFR] 355) are currently anticipated to be produced, used, stored, or disposed of as a result of work or energy generation on the project.

A spill control and counter measures plan (SPCCP) that outlines procedures to be implemented to prevent the release of hazardous substances into the environment will be developed and implemented. This plan will include a number of required best management practices, and all contractors will be required to keep materials on hand to control and contain a petroleum spill. These materials will include, at a minimum, a shovel, tank patch kit, and oil-absorbent materials. Any spills will be reported in accordance with applicable regulations. Contractors will be responsible for ensuring responsible action on the part of construction personnel.

1.3.18 Health and Safety Program

Searchlight Wind Energy, LLC has developed time-tested, successful safety procedures for the construction and operation of wind energy projects. This POD commits Searchlight Wind Energy, LLC to the implementation of these continuously updated safety procedures for the construction, operation, and decommissioning of the Searchlight Wind Energy, LLC Energy Facility.

A sample SPCCP from a similar wind energy project in Texas is included as Attachment 1 for reference. Through the environmental review and permitting processes, project-specific safety requirements will be identified. Any project-specific safety measures will be incorporated into the final project plans and the final version of this POD.

Public safety concerns associated with the construction of this project may include:

- The movement of large construction vehicles, equipment, and materials;
- Falling overhead objects;
- Falls into open excavations; and
- Electrocution.

These issues are most relevant to construction personnel who will be working close to construction equipment and materials, and who will be exposed to construction related hazards daily. Certain construction activities (excavation, heavy vehicular travel) may pose risks to construction personnel and the general public when working near oil and gas facilities in the ROW. However, risk of construction-related injury will be minimized through careful safety planning, regular safety training, and use of appropriate safety equipment.

In many ways, wind energy facilities are safer than other forms of energy production because combustible fuel sources and fuel storage are not required. In addition, use and/or generation of toxic or hazardous materials are minor in comparison to other types of generating facilities. However, wind turbine generators are generally more accessible to the public, and risks to public health and safety can be associated with these facilities. Examples of such safety concerns include tower collapse, blade throw, stray voltage, fire in the nacelle, and lightning strikes. Although public concern over these incidents is high, actual safety incidents associated with wind farm facility operation are rare. These issues will be fully explored during the project environmental review, and additional safety measures may be identified and incorporated into project plans and the EIS.

Emergency Response

Searchlight Wind Energy, LLC will prepare an Emergency Response Plan that is specific to this project. Copies of the Emergency Response Plan will be provided to all emergency service providers prior to facility construction and operation.

Construction and Human Waste

During construction, portable toilets will be located at reasonably accessible locations throughout the ROW. Construction workers will be directed to use these facilities. Portable toilets will be replaced as needed.

Air Quality

Since asbestos and heavy metals are not expected to occur in the soils, it should not be necessary to monitor air quality during either the construction or operation of the project. However, a road-spraying program using water may be employed during construction to suppress nuisance dust caused by vehicle and equipment traffic.

1.4 GOVERNMENT AGENCIES INVOLVED

The proposed Searchlight Wind Energy, LLC Energy Facility project will be reviewed by the United States Department of the Interior, BLM's Las Vegas Field Office Western, the Federal Aviation Administration (FAA), and Clark County, Nevada. Depending on the resources identified at the site, agencies like the U.S. Fish and Wildlife Service (USFWS), the Nevada Department of Wildlife (NDOW), the Nevada State Historic Preservation Office (SHPO), the U.S. Department of Transportation, and the

Nevada Department of Transportation, the U.S. Army Corps of Engineers (USACE), and the FAA may review the ROW application and associated environmental compliance documents and permits. Table 1-4 identifies the potential permits and approvals that may be required for the project.

Table 1-3. Calculated Disturbance for Searchlight Facility.

Infrastructure on Public Land	Quantity	Type	Acres per Unit	Disturbed Area (acres)
Turbine Sites	87	Permanent	0.09	7.83
Turbine Sites	87	Temporary	1.62	140.94
Interconnect Facility [3]	1	Permanent	5	5
Substations	2	Permanent	5	10
Laydown Area – West	1	Temporary	10	10
Laydown Area – East	1	Permanent	10	10
O&M Facility	1	Permanent	5	5
Met Towers	4	Permanent	0.03	12
Total Disturbance (acres)		**Permanent** **Temporary**		**32.86** **150.94**
[3] Interconnection facility will be owned and operated by Western.				

1.5 FINANCIAL AND TECHNICAL CAPABILITY OF APPLICANT

Duke Energy, a parent corporation for Searchlight Wind Energy, LLC, generates and sells wholesale electricity to utilities, cooperatives, municipalities and other large energy users to support electric reliability. Duke Energy owns and operates approximately 36,000 megawatts of base-load and peak generation in the United States, which it distributes to its 4 million customers. Duke Energy's service territory covers 47,000 square miles (120,000 km2) with 106,000 miles (171,000 km) of distribution lines. Operating revenues for fourth quarter ended December 31, 2010, were $3.44 billion, compared to $3.11 billion for the same quarter ended December 31, 2009.

Table 1-4. Potential Permits and Approvals for the Searchlight Wind Energy, LLC Energy Facility.

Agency	Permit/Approval Required
Federal	
Bureau of Land Management (BLM)	National Environmental Protection Act (NEPA) Implementation; Issuance of Right-of-Way (ROW) Grant
Western Area Power Administration, an Agency of the U.S. Department of Energy (Western)	NEPA Implementation; Acquisition of ROW Grant for Electrical Interconnection Facility/Switchyard
Federal Aviation Administration (FAA)	Determination of No Hazard to Air Navigation and Operations
U.S. Army Corps of Engineers (USACE)	Clean Water Act, Section 404, Nationwide Permit 12
U.S. Fish and Wildlife Service USFWS	Endangered Species Act (ESA), Section 7, Consultation and Biological Opinion
State	
Nevada Department of Wildlife (NDOW)	Project Review Including Wildlife and Habitat Consultation
State Historic Preservation Office (SHPO)	Section 106, Consultation under National and State Historic Preservation Acts
Nevada Public Utilities Commission (NPUC)	Utility Environmental Protection Act Compliance
Nevada Department of Transportation (NDOT)	State and County ROW Encroachment Permits; Oversize/Overweight Permits
Nevada Department of Water Resources (NDWR)	402 National Pollutant Discharge Elimination System General Stormwater Permit for Construction Activities and 401 Water Quality Certification. O&M SWPPP and SPCCP
Nevada Division of Water Resources	Well Permit
Nevada State Fire Marshall	Hazardous Materials Storage Permit; Nevada Combined Agency Permit; Tier II Compliance
Local	
Clark County Comprehensive Planning	Conditional use permit; Height Variance; Building Permit
Clark County Regional Flood Control District (CCRFCD)	FEMA Map Review and CCRFCD Plan Compliance
Clark County Health District Air Pollution Control Division	Dust Control Permit; Grading Permit
Clark County Health District	Septic System Permit
Clark County Fire Department	Blasting Permits (if necessary)

2.0 CONSTRUCTION OF FACILITIES

2.1 WIND TURBINE DESIGN, LAYOUT, INSTALLATION, AND CONSTRUCTION PROCESSES INCLUDING TIMETABLE AND SEQUENCE OF CONSTRUCTION

The actions necessary to construct the Searchlight Wind Energy, LLC Energy Facility are described below. This section of the POD presents a general description of the construction steps for the major components of this project. This plan describes the general activities and design approaches as currently understood and anticipated. Searchlight Wind Energy, LLC will remain in contact with the BLM as project designs are finalized and more specifics about construction are available. It is anticipated construction will occur in one continuous phase and is expected to take approximately eight to 12 months.

Project construction, which will be performed in several stages, will include the following main elements and activities:

- Widening and grading of existing roads;
- General clearing and construction of access roads, crane pads, and turn-around areas;
- Grading of the field construction office area (O&M building), the two electrical substation areas, the two laydown yards, and the electrical interconnection facility/switchyard area;
- Constructing turbine tower foundations;
- Installing electrical collection system;
- Assembling and erecting wind turbine generators;
- Constructing and installing two electrical substations;
- Plant commissioning and energizing;
- Final grading and drainage; and
- Restoration activities.

All project construction will follow site-specific soil erosion and sediment control measures as described in the SWPPP prepared and implemented in accordance with Nevada Division of Environmental Protection Storm Water General Permit NVR10000.

Construction is anticipated to take from eight to 12 months to complete. Table 2-1 identifies the proposed start date and duration of construction by facility. A project milestone construction schedule will be developed as the project design is developed.

Searchlight Wind Energy, LLC plans to place up to 87 Siemens 2.3 MW or similar wind turbine generators. The proposed wind turbine generators will be the latest generation of three-bladed, upwind, variable speed Siemens 2.3 MW or similar models. The blades, will have a 331-foot rotor diameter, and will be made of glass-reinforced fiber with steel internal components. The nacelle, which contains the generator, gearbox, main shaft, bearings, yaw mechanism, and various safety systems, will be fully enclosed with a steel chassis and fiberglass covering. Each wind turbine generator is fully automatic and self regulating, and has been designed to operate in the high winds and hot weather conditions of the site. Fully enclosed conical steel tubular towers 262 feet tall will support the turbines and will contain the electronic power and control systems. The maximum tower and blade height together is 427 feet. The

wind turbine generators will be painted a matte, light off-white color, or a color otherwise required by responsible agencies (U.S. Department of Transportation, Federal Aviation Administration, 2007). Figure 2-1 shows a photograph and dimensions of the Siemens SWT-2.3-93 turbine.

Table 2-1. Proposed Construction Schedule (Approximate).

Facility	Start	Duration
Road Construction	Week 1	12 weeks
Site Restoration	Week 2	35 weeks
Meteorological Masts Installation	Week 4	2 weeks
Road Maintenance	Week 7	31 weeks
Foundation Construction	Week 7	18 weeks
O&M Building	Week 8	16 weeks
Trenching and Cabling	Week 12	18 weeks
Substation and Interconnection Facility/Switchyard Construction	Week 12	24 weeks
Transmission Line Installation	Week 12	24 weeks
Wind Turbine Generator Installation	Week 16	18 weeks
Wind Turbine Generator Commissioning	Week 34	4 weeks
Project Substantial Completion	Week 38	Milestone

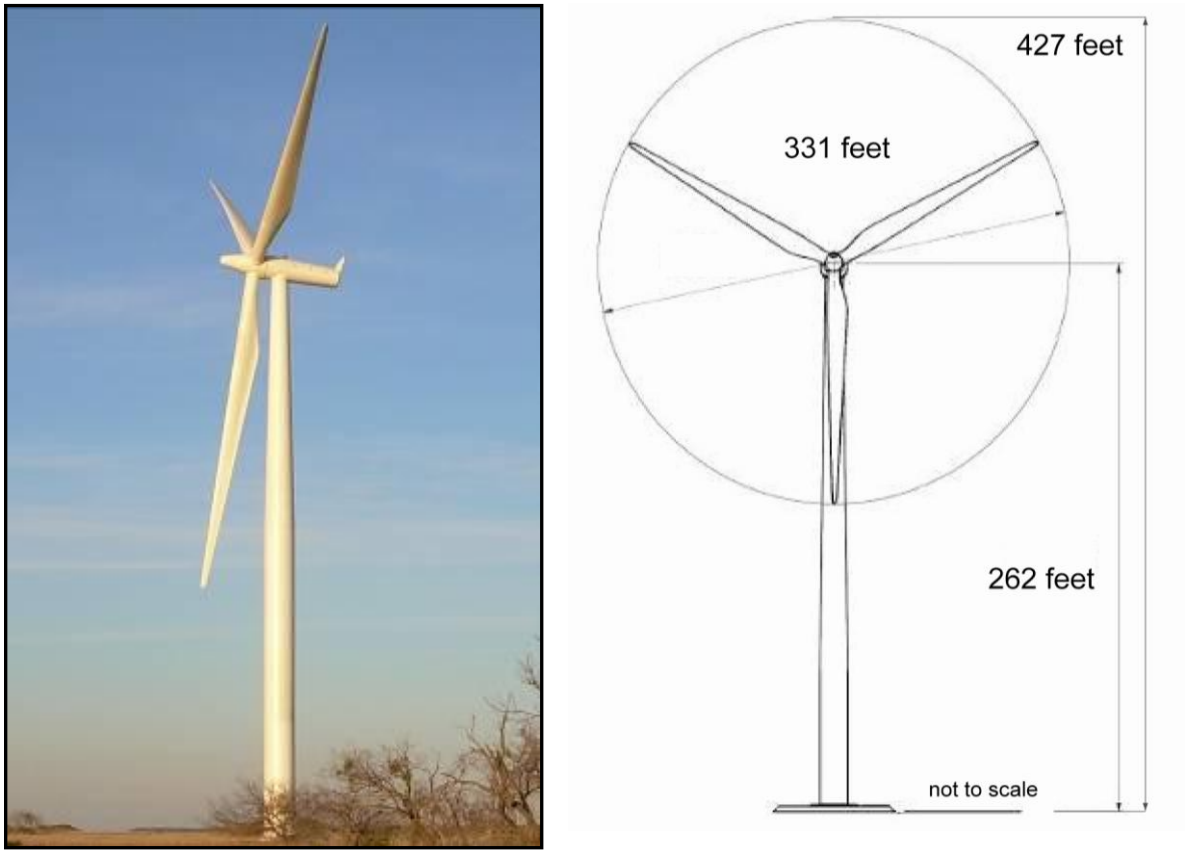

Figure 2-1. Photograph and Dimensions of the Siemens SWT-2.3-93 Turbine.

The wind turbine generators are equipped with sensors to continuously monitor wind speed and direction. Once the wind reaches a predetermined speed (approximately 9 miles per hour [mph]), the wind turbine generator rotor and blades will begin to turn and a generator will produce alternating current electricity synchronized with the electric grid frequency at a voltage that can be increased to transmission level voltages. As the wind changes direction, the turbines will rotate to face the prevailing wind to maximize energy production. The turbines are pitch regulated, that is, the angle of the turbine blades adjust once maximum power output is reached at around 32 mph (they do not adjust at wind speeds below maximum output). At a predetermined maximum wind speed (approximately 55 mph), the wind turbine generators will shut down to limit stress on the turbine.

Each wind turbine generator contains a safety system that ensures automatic shut down of the turbine in the event of any mechanical malfunction, excessive vibration, grid electrical faults, or loss of grid power. During any mechanical malfunction or excessive vibration, the turbines will remain shut down until the cause of the malfunction is identified and resolved by the project O&M team.

If grid electrical faults or loss of grid power occurs, the turbines will automatically be brought back into service when the problem is resolved. The wind turbine generators on the project site have been spaced to maximize the flow of wind across the project site to each wind turbine generator from prevailing southerly and southwesterly winds. Spacing between turbines minimizes inefficiencies associated with the wake effects each turbine creates in its immediate vicinity.

The project will require a Determination of No Hazard to Air Navigation (NOHA) from the FAA for each wind turbine generator. Searchlight Wind Energy, LLC will file a Form 7460-1, Notification of Proposed Construction or Alteration with the FAA for the wind turbine generators to obtain FAA approval for the wind turbine generators and to determine lighting requirements.

Foundations

Wind turbine foundation designs will be based on the load information provided by the selected wind turbine generator manufacturer and the load-bearing soil characteristics determined by geotechnical investigations at each wind turbine generator location. The typical foundation for a Siemens 2.3 MW wind turbine generator is a reinforced concrete spread foundation resting directly on soil approximately 10 feet below ground. The foundation is generally an octagon shape from 40 feet to 60 feet wide with a concrete pier on the top of the mat extending to ground level. Each foundation requires approximately 300 cubic yards of concrete. Excavated soil not used as backfill will be stored on site and made available for sale. Figure 2-2 shows some photographs of a foundation under construction. The final design of the foundation will be determined by the geotechnical considerations at each turbine site. Figure 2-3 shows the dimensions of a typical foundation.

2.1.1 Pad-Mounted Transformers

A 34.5 kV pad-mounted transformer is required adjacent to the concrete pad of the turbine foundation to step up the voltage from the wind turbine generator at 690 volts to the 34.5 kV electrical collection system for the project. The transformer foundation will be a concrete slab approximately 7 feet wide by 10 feet long (Figure 2-4) placed over compacted soil or granular material. In the unlikely event that oil is spilled from the transformer, containment and countermeasures for site management used by Searchlight Wind Energy, LLC are included for reference SPCCP in an example from another Duke wind energy facility. A project-specific SPCCP will be developed and incorporated into this POD during the NEPA process (see Attachment 1).

Figure 2-2. Turbine Foundation Under Construction.

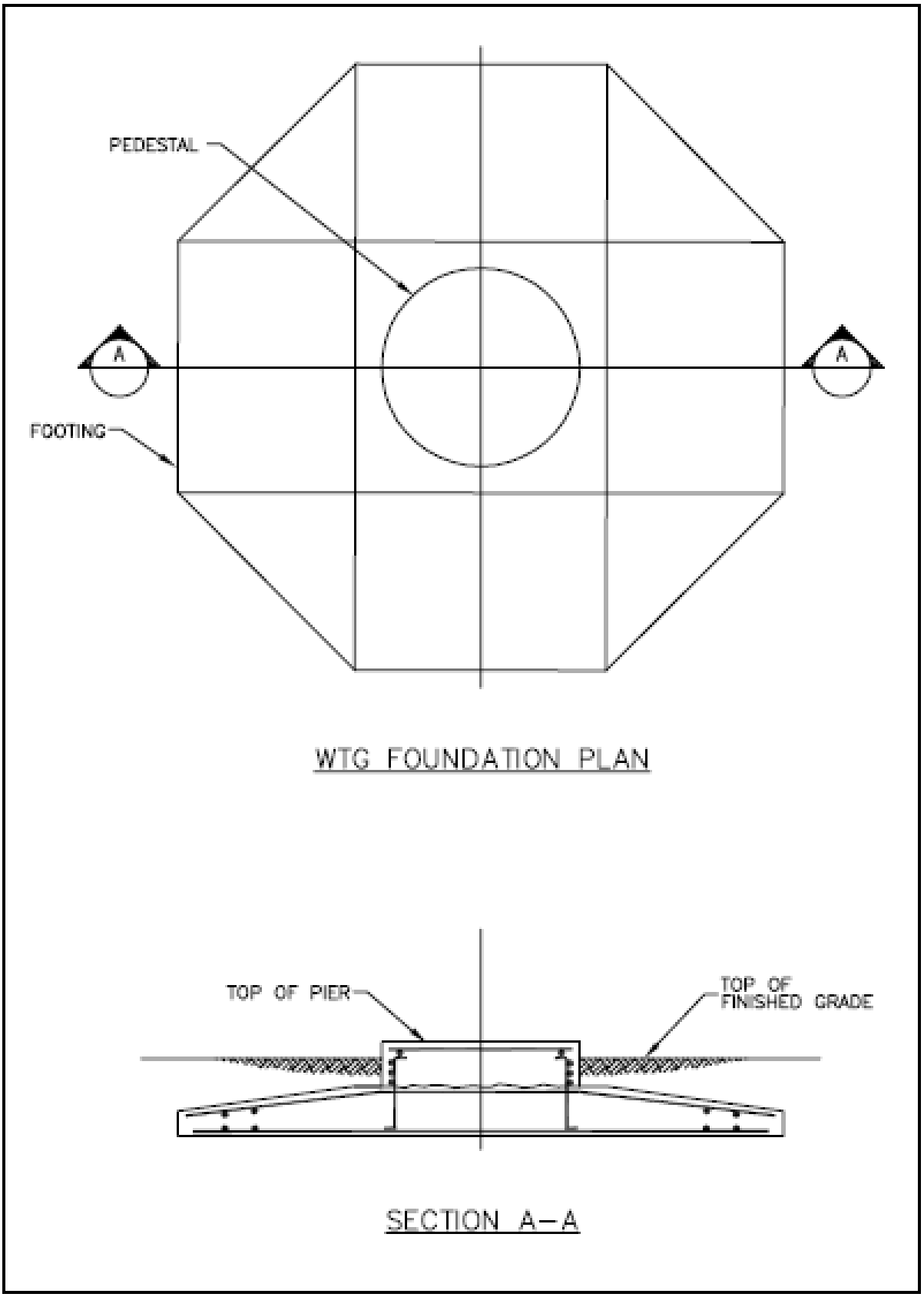

Figure 2-3. Typical Turbine Foundation.

Figure 2-4. Photograph of a Typical Pad-Mounted Transformer Prior to Backfill.

Electrical Collection and Distribution System

Each pad-mounted transformer described in Section 3.2.3 is then connected in a 34.5 kV underground collection system, which is connected to the project substation. Depending on final design, one to three separate parallel trenches will be required. Each trench is typically 2 feet wide and 4 feet deep. Excavated soil not used as backfill will be stored on site and made available for sale. In some locations, topographic or geologic constraints may necessitate the placement of overhead collection lines on single wood poles. The locations of overhead collection lines will be determined after geotechnical investigations and when a more detailed project design is developed.

The project substation steps up the voltage from 34.5 kV to 230 kV and will contain a large transformer, metering equipment, circuit breakers, poles, disconnects, and devices to regulate the flow of electrical power. A new 230 kV aboveground overhead transmission line will be constructed between the two electrical substations and the electrical interconnection facility/switchyard. From project Substation 2 (see Figure 1-1), the aboveground transmission line will be routed on poles or lattice towers for approximately 7.3 miles across BLM lands to connect with Western's 230 kV line on federal land administered by the BLM in Section 26, T28S, R64E. During construction, the transmission line will be accessed using all-terrain or off-road vehicles to carry equipment and poles or towers to the site.

2.2 POTENTIAL GEOTECHNICAL STUDIES

Prior to construction, Searchlight Wind Energy, LLC will conduct numerous pre-construction activities, including the aerial acquisition of 2-foot contour interval topographic survey data. Before construction can begin, a site survey will be performed to stake the exact location of the wind turbine generators, access roads, electrical lines, facility access entryways from U.S. Highway 95 and Nevada State Highway 164, O&M building, laydown yards, electrical substation areas, and the electrical interconnection facility/switchyard.

Once the surveys are complete, a geotechnical investigation will be performed to identify subsurface conditions that will dictate the design specifications of the access roads, foundations, underground trenching, and electrical grounding systems. The geotechnical investigation involves using a truck-mounted drill rig, which bores test holes in soil to the engineer's required depths. The purpose of a geotechnical investigation is to identify the subsurface soil and rock types and their strength properties by sampling and lab testing. Soil samples will be tested to measure the soil's electrical properties to ensure proper design of the grounding system. During construction of a wind energy facility a geotechnical investigation is generally performed at each turbine location, at the substation and interconnection locations, along the access roads, and at the O&M building site.

Using gathered geotechnical information, environmental conditions, title information, and site topography, Searchlight Wind Energy, LLC will establish a set of site-specific construction specifications for the proposed project. Design and construction specifications will be tailored to site-specific conditions by qualified technical staff and engineers. Searchlight Wind Energy, LLC will ensure that all aspects of the specifications as well as the actual onsite construction comply with all applicable federal, state, and local codes and best management practices.

2.3 PROJECT PHASING

Searchlight Wind Energy, LLC does not anticipate any phased development at this time.

2.4 ACCESS AND TRANSPORTATION SYSTEM, COMPONENT DELIVERY, AND WORKER ACCESS

The primary access routes into the project site will be from U.S. Highway 95 and Nevada State Highway 164. Additional information regarding access to the project site during construction and operations will be incorporated into this section throughout the NEPA process.

2.5 CONSTRUCTION WORK FORCE NUMBERS, VEHICLES, EQUIPMENT, AND TIMEFRAMES

During peak construction times, 25 to 75 people are expected on site. Construction equipment will generally consist of:

- Road construction equipment or bulldozers, including motor graders and compactors;
- Water trucks for dust control and compaction;
- General excavation equipment;
- Rock-drill, air compressor, and explosives;
- Trenching machinery;
- Concrete batching plant(s) and concrete trucks;
- Heavy-haul trucks; and
- Heavy-lift crane(s).

Based on preliminary plans, construction traffic via U.S. Highway 95 and Nevada State Highway 164 is estimated to be approximately 350 one-way trips per day during the construction period (based on 75 construction personnel leaving and entering the project site, and 100 delivery trucks leaving and entering the project site). This is likely to be the maximum possible amount of trips. Peak traffic would occur only

for a short period, and assumes that no carpooling takes place among construction workers. Both highways, and particularly U.S. Highway 95, are currently heavily used by both personal vehicles and commercial trucks traveling to and from Las Vegas. Construction-related traffic will be turning off these highways only at designated locations. These turn off locations will be designed in accordance with NDOT regulations, include turn out lanes and merge lanes, and be in areas with long sight distance. Signs indicating "Caution: Trucks Turning" will be placed along each highway to alert through-traffic.

2.6 SITE PREPARATION, SURVEYING, AND STAKING

As mentioned in Section 2.2, Searchlight Wind Energy, LLC will conduct a topographic survey. To assure compliance with various environmental protection commitments and permit conditions, Searchlight Wind Energy, LLC will also prepare a Construction Environmental Compliance Plan. Prior to beginning work at the construction site, all work crews will be trained to comply with the environmental compliance program and with project safety rules. Before construction begins, sensitive environmental and/or cultural resources will be flagged in the field, and sediment and erosion control measures will also be implemented.

About one week prior to the start of construction at any given site, an environmental inspector (if required), the contractor, and any pertinent subcontractors will conduct a walk-over of areas to be affected, or areas that may be potentially affected, by proposed construction activities. These pre-construction walk-overs will occur regularly and are intended to identify sensitive resources to avoid, limits of clearing, location of drainage features (e.g., culverts, ditches), and the layout for sedimentation and erosion control measures. Upon identification of these sensitive features, specific construction procedures will be reviewed, and any modifications to construction methods or locations will be agreed upon before construction activities begin. Agency representatives will be consulted or included on these walk-overs as needed.

Prior to the start of construction, Searchlight Wind Energy, LLC will review and document the general condition of the site, including type and abundance of vegetation and areas of existing disturbance. A licensed surveyor will survey and stake all road and turbine locations before construction begins.

As mentioned in Section ____, the O&M building, laydown yards, substations, and interconnection area will be fenced and gated for security but because of the existing road and trail network and the open accessibility to public land, it will not be possible to prevent access to the ROW. During construction, warning signs, flaggers in high-traffic areas, and security personnel at turbine sites under construction will be employed for the safety of the public and construction workers, and for security at active work areas.

2.7 SITE PREPARATION, VEGETATION REMOVAL, AND TREATMENT

Clearing and disposing of trash, debris, and scrub on those portions of the site where construction will occur will be performed during the initial stages of construction. Existing vegetation will be cleared only where necessary.

2.8 SITE CLEARING, GRADING, AND EXCAVATION

No clearing or grading activities will occur until sediment and erosion control measures are installed in accordance with the SWPPP. Clearing and grading will occur at existing roads, access roads, temporary staging areas (laydown yards), turbine and other facility locations, electrical substation locations, electrical interconnection facility/switchyard locations, and the transmission line corridor, as necessary.

Clearing and disposal of trash, debris, and scrub on those portions of the site where construction will occur will be performed at the end of each work day through all stages of construction. Existing vegetation will be cleared only where necessary. All excavations made by clearing activities will be backfilled with compacted earth/aggregate available on site. Cuttings and debris will be disposed of at an approved facility designed to handle such waste or at the direction of the BLM Authorized Officer.

Figure 2- illustrates a cleared and graded road suitable for facility component transport, including turbine parts.

Figure 2-5. Cleared and Graded Path for Road.

To construct project access roads in the steeper and more topographically dissected lands in the northern and eastern portions of the ROW, it may be necessary to blast rock to reach the minimum slope and gradient required to transport turbine components and crane(s). Blasting may also be required for foundation construction in areas where bedrock exists above the foundation grade. Each location will be assessed with regard to apparatus or structures in the vicinity, and a determination will be made as to the suitability of that location for blasting. Any foundation or road excavation deemed unsafe to blast will be excavated using alternative means, such as a rock hammer.

Based on industry best management practices, Searchlight Wind Energy, LLC will carry out controlled blasting operations no closer than 200 feet to any buried pipeline or any aboveground structures. Prior to controlled blasting around structures, owners of the structures and agency representatives will be notified, so that any concerns can be addressed prior to blasting.

All blasting will be conducted in accordance with a Blasting Control Plan and permit issued by the Clark County Fire Department. All blasting will be designed and carried out by a specialist contractor who has significant experience and expertise in this field and is licensed in the State of Nevada to carry out such work. A blast pattern and shot design will be prepared by the contractor, and reviewed and approved by Searchlight Wind Energy, LLC prior to conducting each blast. Periodic seismograph monitoring of blasts will be conducted as deemed appropriate. Blasting will be limited to the hours between 8 a.m. and 5 p.m. Searchlight Wind Energy, LLC will ensure that the shot design will be structured with proper placement and stemming of explosive and use of blast blankets where applicable to minimize flyrock.

Sediment and erosion control measures will be in place prior to road construction. Road construction is a three-step process:

1. Clear and grade (Section 2.8).
2. Lay down aggregate base (gravel) with a dump truck or live bottom truck.
3. Proof roll and compact gravel.

Any material placed in the areas of the roads or foundations will be compacted to at least 90% of the maximum Proctor density or greater as required for road structural integrity and foundation design. Excess soil not used for road fill or excavation backfill will be stored on site and made available for sale.

Figure 2- illustrates the stages of road construction.

Figure 2-6. Stages of Road Construction.

Top Right Clearing and Grading
Main Photo: Loading trucks from gravel stock pile
Bottom Left: Transporting gravel
Top Left: Dump truck ready to lay down gravel
Bottom Right: Compaction

2.9 GRAVEL, AGGREGATE, CONCRETE NEEDS, AND SOURCES

Unless a local concrete batch plant is available during construction, concrete for foundations will be mixed at mobile batch plants in the laydown yards shown on Figure 1-2. If concrete is mixed at mobile batch plants, cement, water, and aggregate will also be staged in the laydown yards (Figure 2-7).

Figure 2-7. Mobile Batch Plant.

2.10 WIND TURBINE ASSEMBLY AND CONSTRUCTION

Wind turbine foundation design will be determined after geotechnical investigation is complete. Typically, foundations are a spread foot design or equivalent, as specified by the project geotechnical/civil engineer. Refer to Figures 2-2 and 2-3 for illustrations of the proposed typical foundation type. Each foundation may be excavated to a depth of approximately 10 feet and a width of 50 to 60 feet.

Once the foundation concrete is cured, it is buried and backfilled with the excavated onsite material compacted to design criteria. Excess soil not used for backfill will be stored on site and made available for sale. Typically the top of the foundation is a pedestal that may either be flush with the ground or may extend 6 to 8 inches above grade. At the base of each tower, a rectangular area approximately 100 feet by 60 feet will be developed as a gravel crane pad. The tower sections, rotor components, and nacelle for each turbine will then be delivered to each site and unloaded by crane. A large erection crane will set the tower segments on the foundation, place the nacelle on top of the tower, and, after ground assembly, place the rotor onto the nacelle.

The towers will be delivered in three or four sections. The first section of each tower will be hoisted into place on top of the foundation pedestal by cranes and bolted to the foundation. The other tower sections will then be installed by crane and bolted together. The nacelle (which includes the generator and gearbox) will be hoisted by crane and set into place on top of the tower. The rotor blades will be attached to the rotor hub while on the ground, and the entire rotor hub will be hoisted by crane up to the nacelle height and bolted to the nacelle. Crane crews will erect the turbines soon after all components arrive to minimize the amount of time turbine equipment is on the ground. Figure 2- illustrates the turbine erection process.

Figure 2-8. Tower Base Section, Nacelle, and Rotor Being Lifted into Place.

2.11 ELECTRICAL CONSTRUCTION ACTIVITES

Energy generated by the wind turbine generators will be delivered to two project electrical substations via an underground collection system.

To build a substation, the following tasks are required:

- Survey/stake and clear site;
- Install sediment and erosion control measures;
- Clear site;
- Perform site grading;
- Install foundations;
- Install below-grade raceway (conduit, ductbank, trench, etc.);
- Install below-grade ground grid;
- Install perimeter fence;
- Install sublayer of crushed rock surfacing;
- Install substation steel structures and control enclosures;
- Install substation electrical equipment (circuit breakers, transformers, switches, potential transformers, etc.);
- Install above-grade ground stringers;
- Install substation bus conductors and jumpers;
- Install control/relay and communication materials;

- Install secondary control/power cable and terminations;
- Install final layer of crushed rock surfacing;
- Perform substation testing/commissioning activities; and
- Energize substation.

Once the detailed engineering design is performed, it will be determined whether additional tasks are required. Figure 2-95 is a photograph of a partially completed substation.

Figure 2-95. Partially Completed Substation.

Following electrical interconnection of the project's 230 kV overhead line with the Western's 230 kV system, the project will be energized, tested, and commissioned prior to beginning commercial operation and sale of renewable electricity.

2.11.1 Trenching for Underground Lines

Open trenching is necessary to place electrical collection system cables and fiber optic communication lines. The collection and communications systems will be constructed parallel to the roads running from and between the wind turbine generators to the project substations and the O&M building. Trenches will be excavated to a depth of 4 feet and a width of 2 feet by a trenching machine (Figure 2-6). The use of a rock hammer attachment or blasting may be required in areas where rock is at or near the ground surface.

Figure 2-60. Trenching Machine Excavating a Trench for Cables.

Open trenches will be minimized to those distances necessary to conduct work. Once the electric cables and fiber optic communications cable have been placed in the trench (Figure 2-7) and connected to the wind turbine generators and transformers (as applicable), the trench will be backfilled with the excavated trench material. Depending on the thermal resistivity of the excavated soils as determined during the geotechnical investigations, in some areas select backfill may be placed around the electric cables to facilitate heat dissipation. In either case, backfilling will occur as soon as cable integrity has been tested and confirmed.

Figure 2-71. Laying Cable in the Trench.

Buried underground infrastructure associated with the project will be installed with safety markings as required by law. The locations of these underground structures will be on file with the Underground Service Alert of Central/Northern California and Nevada.

In some locations, topographic or geologic constraints may necessitate the use of overhead collection lines on single wood poles. The locations where overhead collection lines will be used will be determined after a geotechnical investigation has been conducted and a more detailed project design has been developed.

2.12 AVIATION LIGHTING

The project will require a Determination of NOHA from the FAA for each wind turbine generator. Searchlight Wind Energy, LLC will file a Form 7460-1 Notification of Proposed Construction or Alteration with the FAA for the wind turbine generators to obtain FAA approval for the wind turbine generators and determine lighting requirements.

2.13 SITE STABILIZATION, PROTECTION, AND RECLAMATION PRACTICES

2.13.1 Safety Signs and Fences

At project access roads from U.S. Highway 95 and Nevada State Highway 164, Searchlight Wind Energy, LLC will post safety and warning signs informing the public of construction activities and recommending that the public stay off the site. Similar signage will be posted throughout active project work areas. Off-road vehicle use is likely to remain unchanged from the present. Because the entire area is public land with open access, the project will be designed to coexist with current and anticipated future land uses.

Temporary warning fences will be erected as needed in areas where public safety risks could exist and where site personnel will not be available to control public access (such as at excavated foundation holes and electrical collection system trenches). Permanent fencing will be installed around the permanent laydown yard, the O&M building site, the two project electrical substations, and the electrical interconnection facility/switchyard. Other areas considered hazardous, or where security or theft are of concern, may also be fenced. Searchlight Wind Energy, LLC will coordinate the fencing with the BLM.

Temporary fencing around unfinished turbine bases and excavations is designed primarily to warn people of potential danger associated with construction; this fencing is typically high-visibility plastic mesh. Permanent fencing will be chain link with locked gates.

2.13.2 Site Cleanup and Restoration

Clearing and disposal of trash, debris, and scrub on those portions of the site where construction will occur will be performed at the end of each work day through all stages of construction. Vegetation will be cleared only where necessary, and all excavations made by clearing activities will be backfilled with compacted earth/aggregate as soon as the cable infrastructure is tested. Disposal of cuttings and debris will be in an approved facility designed to handle such waste or at the direction of the BLM Authorized Officer.

Prior to the completion of construction, all remaining trash and debris will be removed from the site. Site cleanup will be performed on a continuous basis. The O&M provider's personnel will be responsible for cleanup during routine daily maintenance.

All temporarily disturbed areas will be returned to their previous state, to the extent feasible. Any debris will be removed and properly disposed of off site. Through the NEPA process, Searchlight Wind Energy, LLC will work with BLM personnel to establish a Construction Mitigation and Restoration Plan to incorporate methods for vegetation rehabilitation in areas temporarily disturbed by project development, noxious weed management provisions, and the movement and rehabilitation of sensitive plant species, as feasible. A restoration punch list will be developed, and construction activities will not be deemed complete until regulatory agencies with jurisdiction over the project have acknowledged that restoration activities have been adequately implemented.

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3.0 RELATED FACILITIES

3.1 TRANSMISSION SYSTEM INTERCONNECT

3.1.1 Overhead Distribution/Transmission Lines

A proposed aboveground 230 kV overhead transmission line will be routed between the project electrical substations and the electrical interconnection facility/switchyard, connecting with Western's 230 kV Mead–Davis transmission line east of the ROW. The project overhead transmission line will be 7.3 miles long and will be routed across BLM lands. The transmission line will follow the route shown on the site layout map in Figure 1-2. The transmission line will run from west to east through the following sections:

- T28S, R63E, Sections 27, 26, and 25
- T28S, R64E, Sections 30, 29, 28, 27, and 26

The overhead transmission line will consist of electric cable strung from poles or lattice towers (Figure 3-1). The transmission line and poles will include devices to prevent raptor perching. The overhead transmission line will be accessed and installed by truck. A temporary at-grade road will be constructed parallel to the transmission line and the area will be restored to its previous state to the extent feasible upon completion.

3.1.2 Electric Substation

Energy generated by the Searchlight Wind Energy, LLC Energy Facility wind turbine generators will be delivered to the two project electrical substations via an underground collection system. At the substation, a transformer will increase the voltage of the energy from the collection system level of 34.5 kV to the transmission level of 230 kV. Capacitor banks and other equipment may be installed at the substation to provide the voltage support necessary to meet interconnection requirements for the project (as yet unknown). A small control building at the substation will house electrical metering equipment.

To build a substation, the following tasks are required:

- Survey/stake and clear site;
- Install sediment and erosion control measures;
- Clear site;
- Perform site grading;
- Install foundations;
- Install below-grade raceway (conduit, ductbank, trench, etc.);
- Install below-grade ground grid;
- Install perimeter fence;
- Install sublayer of crushed rock surfacing;
- Install substation steel structures and control enclosures;

Figure 3-1. Stringing the Wires on the Transmission Poles.

- Install substation electrical equipment (circuit breakers, transformers, switches, potential transformers, etc.);
- Install above-grade ground stringers;
- Install substation bus conductors and jumpers;
- Install control/relay and communication materials;
- Install secondary control/power cable and terminations;
- Install final layer of crushed rock surfacing;
- Perform substation testing/commissioning activities; and
- Energize substation.

Once the detailed engineering is performed, it will be determined whether additional tasks are required. Figure 3-2 is a photo of a partially completed substation.

Following electrical interconnection of the project's 230 kV overhead line with Western's 230 kV system, the project will be energized, tested, and commissioned prior to beginning commercial operation and sale of renewable electricity.

Figure 3-2. Partially Completed Substation.

3.2 METEOROLOGICAL TOWERS

Four permanent meteorological towers will be installed to measure wind speed and direction across the site to compare turbine performance to measured wind speeds over the life of the project. The four tower locations (Figure 1-2) are the same as those currently being used for temporary meteorological monitoring under the project's short-term ROW grant (case number NVLV-082648) that Searchlight Wind Energy, LLC has with the Las Vegas Field Office. Alternate meteorological tower locations may be established if new locations are determined to better suit the project design after initial meteorological data is analyzed. Permanent meteorological towers will measure wind speed and direction across the site. Data from the meteorological stations will help forecast anticipated energy output from the project based on prevailing wind speeds.

The meteorological towers will consist of a free-standing (i.e., no guy wires) lattice steel tower of up to 262 feet (Figure 3-3). Each foot of the tower will have a small foundation (3 feet in diameter and 6 feet deep). Each side of the triangular structure is approximately 30 feet long, and the area disturbed will be approximately 36 feet square.

3.3 OTHER RELATED SYSTEMS

3.3.1 Underground Communication Lines

The wind turbine generators will be operated via a SCADA system on the control panel inside the tower of each wind turbine generator. Each turbine is connected via fiber optic cable to a central computer in the project O&M building. Data can be accessed and the wind turbine generators can be controlled on site or remotely. The fiber optic communications cable will be collocated with the electrical collection system to reduce environmental impacts. Where feasible, collection cabling and communication lines will be collocated with roads to further reduce environmental impacts.

Figure 3-3. Example of a Meteorological Tower.

4.0 OPERATIONS AND MAINTENANCE

4.1 OPERATION AND FACILITY MAINTENANCE NEEDS

4.1.1 Final Testing

Once the project is constructed and the 230 kV project overhead line is connected to Western's 230 kV system, the project will be energized, tested, and commissioned before commercial operation and the sale of renewable energy begins. Prior to project energization, pre-commissioning tests will test the function of the wind turbine generators and their safety systems. Energizing, testing, and the commissioning of each wind turbine generator will be in accordance with the selected manufacturer's testing and commissioning specifications (including testing the pitch systems, yaw system, and lubrication pumps, and demonstrating the power output of each wind turbine generator).

4.1.2 Post-Construction Management

All temporarily disturbed areas will be restored to their previous state, to the extent feasible, and any debris will be removed and properly disposed of off site. Any material placed in the areas of the roads or foundations will be compacted to at least 90% of the maximum Proctor density or greater as required for road structural integrity and foundation design. No soil stability problems are anticipated from project construction.

Prior to completing construction, all trash, construction debris, and landscape cuttings will be removed and properly disposed of off site, and vegetation will be allowed to re-establish.

Future environmental review and permitting activities will result in the generation of a Construction Mitigation and Restoration Plan. This and any other relevant documentation will be incorporated into the EIS and included in the Environmental Compliance Plan, as appropriate.

4.1.3 Site Operations and Maintenance Procedures

The Searchlight Wind Energy, LLC Energy Facility project is expected to have an operating lifetime of approximately 30 years. During operation, the project will be operated and maintained by a team of trained personnel. O&M trucks will be housed at the O&M building and will be used to transport the O&M team, tools, and consumables around the project site to perform routine O&M activities.

Communications between the wind turbine generators and central computers located in the O&M building will be transmitted by the underground fiber optic cable system collocated with the electrical collection system (Section 4.9).

4.1.4 Wind Energy Facility Performance Monitoring

Wind turbines are guided by SCADA computers and software, and generally operate autonomously. The project site manager and O&M staff monitor turbines performance and initiate manual control only as needed for maintenance and troubleshooting (see Section 7.2).

O&M staff will continuously analyze the performance trends of individual wind turbine generators and the overall project to ascertain overall efficiency. This analysis will use data collected from both the wind turbine generators and the permanent meteorological towers. Scheduled maintenance tasks may be added or adjusted to improve performance over the life of the project.

No environmental impacts are expected as a result of project performance monitoring.

4.1.5 Environmental Monitoring

One of the major responsibilities of the project site manager will be to ensure that proper environmental monitoring activities are being performed in accordance with the requirements of the Environmental Compliance Plan. To minimize future environmental impacts, the environmental monitoring program will incorporate monitoring observations and additional mitigation measures as needed into standard operating procedures for the project.

4.1.6 Cleanup

All temporarily disturbed areas will be returned to their previous state, to the extent feasible, and any debris will be removed and properly disposed of off site. Any material placed in the areas of the roads or foundations will be compacted to at least 90% of the maximum Proctor density or greater as required for road structural integrity and foundation design. All trash, construction debris and landscape cuttings shall be removed and properly disposed of off site, and vegetation shall be allowed to re-establish in the areas of trash removal.

4.1.7 Noxious Weed Control

As outlined in Section 5.2.4, a project-specific Noxious Weed Plan will be established in future efforts and included with the Construction Mitigation and Restoration Plan in the Environmental Compliance Plan. The plan will include project-specific stipulations to prevent the establishment and spread of Nevada-listed noxious weeds that may transfer to the site as a result from construction and operation.

4.1.8 Abandonment

When it is determined that it is no longer cost-effective to operate the Searchlight Wind Energy, LLC Energy Facility, the site will be decommissioned as discussed in Section ____, Facility Decommissioning.

4.2 MAINTENANCE ACTIVITIES, INCLUDING ROAD MAINTENANCE

Routine operations will include monitoring and controlling wind turbine generators from the centralized SCADA computer in the O&M building (or remotely over a network), resetting turbine controls and restarting turbines after any outages. Wind turbine performance will be analyzed for preventative maintenance and to afford operational and performance improvements.

Routine maintenance will be performed in accordance with the selected manufacturer's recommendations and will include conducting regular wind turbine generator inspections, lubricating mechanical parts, changing fluids, and, if necessary, cleaning rotor blades. Mechanical equipment located within the nacelle and rotor of each wind turbine generator (including the wind turbine generator gearbox, generators, and yaw system) will be accessed by maintenance personnel using steel ladders or a lift system inside the tower of each wind turbine generator.

Extraordinary maintenance may be required occasionally for major overhauls or component replacement. These activities may require the temporary use of cranes or equipment similar to that used during construction.

Routine maintenance of the pad-mounted transformers and project substations include regular oil checks, verification of all trip settings, and tightening connections in accordance with the selected manufacturer's maintenance manuals. The overhead collection line will require minimal routine maintenance consisting of an infrared scan of conductors using a hand-held scanner every few years.

Long-term O&M traffic will average approximately four to eight vehicle trips per day to project facilities from the O&M building on normal workdays (excluding weekends and holidays). Traffic will access the project site via project access roads, U.S. Highway 95, and Nevada State Highway 164.

O&M activities will be described thoroughly during the environmental review and permitting process. This review will include an analysis of potential environmental impacts; any necessary mitigation measures will be incorporated into the Environmental Compliance Plan.

The Searchlight Wind Energy, LLC Energy Facility access roads established during construction will be used during commercial operation. As during construction, access roads will be entered from U.S. Highway 95 and Nevada State Highway 164. Public access to BLM lands and other private inholdings is not expected to be impacted during operation.

During project operation, roads condition will be evaluated on an as-used basis and roads will be formally inspected at least twice annually. Periodic grading and gravel replacement may be required to maintain road quality. Road maintenance will be scheduled during times of low or no wind to minimize airborne dust. To minimize airborne dust and erosion, speed limits of 20 mph for all O&M vehicles will be posted and enforced throughout the project site.

4.3 OPERATIONS WORKFORCE, EQUIPMENT, AND GROUND TRANSPORTATION

Once completed, the project will employ up to 12 full time staff to operate and maintain the facilities and equipment. Facility staff will use various tools, equipment, and vehicles to maintain and operate the wind energy facility. A full list of these items will be developed and incorporated into this section of the POD during the NEPA process.

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5.0 ENVIRONMENTAL CONSIDERATIONS

The following sections describe resource values and other environmental issues in the project area.

5.1 GENERAL DESCRIPTION OF SITE CHARACTERISTICS

5.1.1 Background

The proposed Searchlight Wind Energy, LLC Energy Facility (Figure 1-2) is in Clark County, Nevada, within the Mojave Desert biome. Lands are managed by the BLM Las Vegas Field Office and included in the BLM Las Vegas Resource Management Plan and Final EIS (BLM 1998). Biologically, flora and fauna within the Mojave Desert biome have adapted to local conditions and formed distinct natural communities, and include species not found anywhere else (i.e., endemics). The area is a part of the high desert, ranging in elevation from roughly 1,800 to 4,400 feet, and is characterized by creosote bush- and mixed scrub-dominated plant communities.

5.1.2 Land Use

The lands in the ROW boundary cover 26,000 acres or approximately 40 square miles. The total area to be disturbed by the project (including temporary disturbance) is 553 acres or 0.87 square miles (approximately 2.1% of the total ROW). The project's permanent footprint will be 0.5% of the ROW. Large areas of open, undeveloped land will exist between individual turbines. This space is necessary for the free flow of wind, resulting in efficient, safe, long-term operation of the wind turbine generators.

5.1.3 Biological Resources

The following summarizes data reviews and special status species that may occur near the ROW. Through the environmental review and permitting processes, a site-specific plan for avoiding and/or mitigating impacts to these biological resources will be prepared. project-specific avoidance and mitigation measures will be incorporated into the final design, the EIS, and the Environmental Compliance Plan.

5.1.4 Literature and Data Research and Field Reconnaissance

Existing biological resource data sources were reviewed to determine the potential for special status species to occur in the proposed project ROW. This review included consideration of sensitive species from lists provided by the USFWS for Clark County (USFWS, 2005), the BLM list of special-status species (BLM, 2007), and the Nevada Natural Heritage Database. A BLM list of plant and animal sensitive species for this area was also reviewed. Based on this review, special-status plant and animal species that may occur in the ROW are summarized in Table 5-1.

Special-status species are protected under Nevada state law, by the BLM, and by the Endangered Species Act (ESA). For purposes of this POD, special-status species are defined as follows:

- Species listed or proposed for listing as threatened or endangered under ESA (50 CFR 17.12 for listed plants, 50 CFR 17.11 for listed animals, and various notices in the Federal Register [FR] for proposed species);
- Species that are candidates for possible future listing as threatened or endangered under ESA (67 FR 40657, June 13, 2002);
- Species that are federal species of concern;

- Species that are listed or proposed for listing by the state of Nevada as threatened or endangered (NRS 527.260-300 and NRS 527.060-120);
- Animal species fully protected in Nevada;
- Animal species of concern to the NDOW and Nevada Natural Heritage Program (NNHP); and
- Species designated as sensitive by the BLM or Species of Special Management Concern to the BLM and managed specifically.

Table 5-1. Special-Status Plant and Animal Species with Potential to Occur within the ROW.

Resource	Status[1]			Habitat and Distribution	Activity/ Bloom Period	Occurrence Probability
	Federal	State	BLM			
Plants						
Las Vegas bearpoppy *Arctomecon californica*	SC	P	S	Open, dry, spongy or powdery, often dissected or hummocked soils with high gypsum content, often with well-developed soil crust, in areas of generally low relief on all aspects and slopes, with a sparse cover of other gypsum-tolerant species surrounded by *Larrea tridentata*, *Atriplex*, and *Coleogyne ramosissima* associations.	Mar-Jun	Low. It is only found in the northern part of Clark County, Nevada, and a few sites in northwest Arizona. Initial field survey associated with meteorological tower ROW permitting did not result in the identification of any individuals of this species. The area was surveyed outside of the normal blooming period, but the basal rosette leaf structure is identifiable during winter periods.
Yellow two-tone beardtongue *Penstemon bicolor* ssp. *bicolor*	SC	None	S	Calcareous or carbonate soils in washes, roadsides, rock crevices, outcrops, or similar places receiving enhanced runoff, in the creosote-bursage, blackbrush, mixed-shrub, and lower juniper zones.	Apr-May	Low. Initial field survey associated with meteorological tower ROW permitting did not result in the identification of any individuals of this species. Although it was surveyed outside of the normal blooming period, the unusual leaf arrangement of this perennial is identifiable during winter periods.
All cacti and yuccas	None	P	None	Dry, rocky slopes in the Mojave Desert.	March-May	High. Initial field survey associated with meteorological tower ROW permitting showed yuccas to be abundant within the ROW.
Amphibians/Reptiles						
Desert tortoise *Gopherus agassizii*	T	P	S	Found in desert shrubland habitat in the Mojave Desert at about 1,000 to 4,000 feet in elevation.	Mar-Nov	High. Initial field survey associated with meteorological tower ROW permitting did not result in the identification of any individuals of this species. However, a burrow was identified within the ROW. The topography, habitat, nearby installations of BLM wildlife water stations, and their proximity to desert tortoise critical habitats suggest that the ROW has a high likelihood of desert tortoise presence.
Banded Gila monster *Heloderma suspectum cinctum*	None	P	S	Found in most habitats throughout its range. It is common in areas with Saguaro cactus and along washes at elevations from near sea level to 4,100 feet. Its range is limited to regions that receive several inches of rain during the summer months and have mild winters and hot summers.	Mar-Nov	Low. Initial field survey associated with meteorological tower ROW permitting did not result in the identification of any individuals of this species, nor of any sign of their presence.
Chuckwalla *Sauromalus ater*	None	P	S	Rocky areas within the Great Basin, Mojave, and Sonoran deserts.	Mar-Nov	Low. Initial field survey associated with meteorological tower ROW permitting did not result in the identification of any individuals of this species, nor of any sign of their presence.

Table 5-1. (Continued)

Resource	Status[1]			Habitat and Distribution	Activity/ Bloom Period	Occurrence Probability
	Federal	State	BLM			
Birds						
Yellow-billed cuckoo *Coccyzus americanus*	C	None	None	Streamside cottonwood, willow groves, and larger mesquite or other vegetation for migrating and breeding preferred. Rarely observed as transient in xeric desert or urban settings.	Year-Round	Low. Preferred habitat is not present within the ROW, and an avian point count (avian use) study conducted during fall 2007 did not identify any individuals of this species.
Southwestern willow flycatcher *Empidonax traillii extimus*	E	P	None	In Nevada, breeds along the Virgin River, lower Muddy River, Colorado River, and Pahranagat Valley in dense riparian tree and shrub communities associated with rivers, swamps, and other wetlands. Nests in native vegetation (willows, seepwillow, boxelder, buttonbush, cottonwood), but also uses thickets dominated by non-native tamarisk and Russian olive, or in mixed native non-native stands.	May-Aug	Low. Preferred habitat is not present within the ROW, and an avian point count (avian use) study conducted during fall 2007 did not identify any individuals of this species.
Bald eagle *Haliaeetus leucocephalus*	T	P	None	Found mostly along rivers and coastlines where tall trees are available for nesting. Most found in Nevada are wintering here, though occasionally, nesting pairs are found in the northern part of the state.	Year-Round	Low. Preferred habitat is not present within the ROW, and an avian point count (avian use) study conducted during fall 2007 did not identify any individuals of this species.
Le Conte's thrasher *Toxostoma lecontei*	None	P	S	Prefers arid, sparsely vegetated habitats, Uncommon over most of range.	Year-Round	Moderate. Habitat present within ROW. However, an avian point count (avian use) study conducted during fall 2007 did not identify any individuals of this species.
Yuma clapper rail *Rallus longirostris yumanensis*	E	P	None	Lower Colorado River (LCR) from Gulf of California in Mexico to Virgin River and Las Vegas area in northern Arizona and Nevada, with concentrations in the U.S. along the LCR from the vicinity of Laughlin, Nevada, to Yuma, Arizona.	Year-Round	Low. Preferred habitat is not present within the ROW, and an avian point count (avian use) study conducted during fall 2007 did not identify any individuals of this species.
Mammals						
Desert Bighorn Sheep *Ovis canadensis nelsoni*	None	None	S	Occupy the Mojave Desert and Great Basin Desert regions of central and southern Nevada	Year-Round	Moderate. Initial field survey associated with meteorological tower ROW permitting did not result in the identification of any individuals of this species. However, the northern margin of the ROW boundary is located approximately one half mile from crucial or winter bighorn sheep habitat.

Table 5-1. (Continued)

Resource	Status[1]			Habitat and Distribution	Activity/ Bloom Period	Occurrence Probability
	Federal	State	BLM			
Townsend's Western big-eared bat *Corynorhinus townsendii*	None	Prop	S	Found throughout Nevada, from low desert to high mountain habitats. Concentrated in areas offering caves or mines as roosting sites and preferring caves and mines where the temperature is 54°F (12°C.) or less but usually above freezing.	Year-Round	Moderate. Initial field survey associated with meteorological tower ROW permitting did not result in the identification of any bats at dusk or dawn. However, habitat for this species exists in the ROW.

[1] Status:

FEDERAL
- E = Endangered
- T = Threatened
- C = Candidate for Federal listing as endangered or threatened
- SC = Species of concern

STATE
- P = Protected by Nevada state law
- Prop = Proposed for state-protected status

BLM
- S = Special-status species in Nevada

In addition to the literature review, a reconnaissance-level, habitat-based assessment was conducted during a field visit on February 2 and 3, 2007, to support permitting for the meteorological tower ROW authorization. Plant communities present, potential habitat for special-status species, and presence or evidence of special-status species were noted when detected. Note that the survey was conducted too early in the season for some annual and herbaceous perennial plants to be evident. Observations from the field visit are summarized in Table 5-2.

Table 5-2. Plant and Animal Species Observed During Initial Field Survey.

Scientific Name	Common Name
Plants	
Ephedra viridis	Green ephedra
Yucca schidigera	Mojave yucca
Yucca brevifolia	Joshua tree
Echinocactus polycephalus	Cotton-top
Opuntia basilaris	Beavertail cactus
Acacia greggii	Catclaw
Cucurbita palmate	Coyote melon
Opuntia acanthocarpa	Buckhorn cholla
Erodium cicutarium	Storksbill
Phoradendron californicum	Desert mistletoe
Echinocereus engelmannii	Hedgehog cactus
Larrea tridentato	Creosote bush
Ambrosia dumosa	Burrobush
Hymenoclea salsola	Cheesebush
Coleogyne ramosissima	Blackbush
Encelia actoni	Acton encelia
Tetradymia sp.	Cotton-thorn
Datura wrightii	Jimson weed
Lycium sp.	Box thorn
Palafoxia arida	Desert needles
Erigonum inflatum	Desert trumpet
Pleuraphis rigida	Big galleta
Poa sp.	Annual grass
Amphibians / Reptiles	
None Seen	
Birds	
Corvus corax	Common raven
Buteo jamaicensis	Red-tailed hawk
Sialia currucoides	Mountain bluebird
Colaptes chrysoides	Gilded flicker
Polioptila melanura	Black-tailed gnatcatcher
Auriparus flaviceps	Verdin
Amphispiza bilineata	Black-throated sparrow
Mammals	
Ammospermophilus leucurus	White-tailed antelope squirrel
Neotoma lepida	Woodrat (sign)
Lepus californicus	Black-tailed jack rabbit (sign/or visual)

5.1.5 Federally Listed, Special Status, and/or Sensitive Species

Federally Listed Species

The USFWS has listed 16 species of plants and/or wildlife in Clark County, Nevada, as threatened or endangered (USFWS, 2005). Of these, only the desert tortoise (*Gopherus agassizii*) is likely to occur within the ROW.

Desert Tortoise (Gopherus agassizii)

The desert tortoise was listed by the USFWS as a threatened species under the federal ESA on April 2, 1990. In addition, as Nevada's state reptile, the desert tortoise is considered a state protected and state threatened species.

During the initial field survey associated with meteorological tower ROW permitting, one desert tortoise burrow was observed within the ROW, approximately 750 feet southwest of the proposed location for meteorological Tower 2 (Section 25 in T28S R63E). The potential for desert tortoise to be encountered in the ROW is considered high due to the favorable topography, proximity of creosote desert scrub habitat, and proximity to USFWS-designated critical desert tortoise habitat in the Paiute-El Dorado Valley Area of Critical Environmental Concern (ACEC), which borders the proposed Searchlight Wind Energy, LLC Energy Facility ROW.

Special-Status Animal Species

BLM's special-status animal species potentially occurring in the ROW are described below.

Banded Gila Monster (Heloderma suspectum ssp. cinctum)

The banded Gila monster is a Nevada state-protected and BLM sensitive species. The banded Gila monster is common in areas with Saguaro cactus and along washes at elevations from near sea level to 4,100 feet. It occurs in southwestern Utah, the southern tip of Nevada, southwestern New Mexico, Arizona, and in Sonora, Mexico, primarily in the Mojave Desert scrub and salt desert scrub ecosystems. The banded Gila monster usually uses burrows excavated by other animals, but can dig its own burrow. They live in heavy brush, rocky brushy wash beds, and/or along canyon bottoms.

Chuckwalla (Sauromalus ater)

The chuckwalla is a state-protected and BLM special status species. The chuckwalla inhabits open flats and rocky areas, often near large rocks and boulders.

Townsend's Western Big-Eared Bat (Corynorhinus townsendii)

Townsend's western big-eared bat is a BLM sensitive species found throughout Nevada, from low desert to high mountain habitats. This species is often found in areas offering caves or mines as roosting sites. Historical mining operations in the Searchlight vicinity have created many open mining shafts for potential occupation, but few other habitat features such as open water are known to occur in the ROW. The Townsend's western big-eared bat is not expected to inhabit the ROW in significant numbers.

Desert Bighorn Sheep (Ovis canadensis nelsoni)

The desert bighorn sheep is a BLM special status species in Nevada. Desert bighorn sheep prefer dry, desert mountain ranges and foothills, near rocky cliffs, in xeric environments with minimal vegetation. In winter, desert bighorn sheep range farther from water sources to browse on vegetation in full leaf. In

summer, desert bighorn sheep remain closer to water and cover such as caves or rocky overhangs. Habitat for this species is present in the ROW.

Le Conte's Thrasher (Toxostoma lecontei)

The Le Conte's thrasher is a BLM special status species and is a state-protected species in Nevada. The Le Conte's thrasher prefers arid, sparsely vegetated habitats, and generally nests in robust saltbushes. Scrub habitat with the potential to support this species is present in the ROW.

5.1.6 Vegetation

Plant Communities

The proposed Searchlight Wind Energy, LLC Energy Facility ROW is characterized by flat to heavily dissected topography and by high desert plant communities. Surface disturbance ranges from minimal to heavy, with vegetation being rather sparse in disturbed areas. The ROW consists primarily of mixed scrub dominated by creosote bush, in loose association with other shrub species (Figure 5-1). Joshua Tree Woodland, blackbush scrub, and yucca also are common within the ROW (Figure 5-2). See Table 5-2 for species observed during the initial field survey associated with meteorological tower ROW permitting.

Figure 5-1. Typical Creosote Scrub Vegetation Community Common within the ROW.

Figure 5-2. Joshua Trees and Yucca Found within the ROW.

Cacti and Yucca

Native cacti and yucca are protected and regulated by NRS 527.060-120 and Nevada Administrative Code (NAC) Chapter 527 when proposed for removal or possession at "commercial" rates or quantities. Such removal or possession requires a permit and tags from the Nevada Division of Forestry.

It is unlawful to cut, destroy, mutilate, remove, or possess any cacti or yucca from any of the lands owned by or under the jurisdiction of the State of Nevada or its counties, or on any reserved or unreserved lands owned by the United States, or from any privately owned lands, without written permission from the legal owner.

Cacti and yucca are found throughout the proposed Searchlight Wind Energy, LLC Energy Facility ROW. Searchlight Wind Energy, LLC will prepare a Construction Mitigation and Restoration Plan to manage the removal and/or transplantation of cacti or yucca per BLM guidelines and future permitting activities.

Noxious Weeds

Noxious weeds are defined by the State of Nevada as "Any species of plant which is, or liable to be, detrimental or destructive and difficult to control or eradicate..." (NRS 555.005). The noxious weed species of primary interest to the BLM Las Vegas Field Office are listed in Table 5-3.

No noxious weeds were identified during the initial field survey associated with meteorological tower ROW permitting. However, the potential for noxious weed seed transport and establishment exists during all construction activities in which vehicles traverse lands free of noxious weeds after traversing other lands with noxious weeds.

Table 5-3. Nevada State Department of Agriculture Noxious Weed List.

Common Name	Scientific Name
Category A Weeds	
African Rue	*Peganum harmala*
Austrian fieldcress	*Rorippa austriaca*
Austrian peaweed	*Sphaerophysa salsula / Swainsona salsula*
Camelthorn	*Alhagi camelorum*
Common crupina	*Crupina vulgaris*
Dalmation Toadflax	*Linaria dalmatica*
Dyer's woad	*Isatis tinctoria*
Eurasian water-milfoil	*Myriophyllum spicatum*
Giant Reed	*Arundo donax*
Giant Salvinia	*Salvinia molesta*
Goats rue	*Galega officinalis*
Houndstongue	*Cynoglossum officinale*
Hydrilla	*Hydrilla verticillata*
Iberian Star thistle	*Centaurea iberica*
Klamath weed	*Hypericum perforatum*
Leafy spurge	*Euphorbia esula*
Malta Star thistle	*Centaurea melitensis*
Mayweed chamomile	*Anthemis cotula*
Mediterranean sage	*Salvia aethiopis*
Purple loosestrife	*Lythrum salicaria, L.virgatum and their cultivars*
Purple Star thistle	*Centaurea calcitrapa*
Rush skeletonweed	*Chondrilla juncea*
Sow Thistle	*Sonchus arvensis*
Spotted Knapweed	*Centaurea masculosa*
Squarrose star thistle	*Centaurea virgata Lam. Var. squarrose*
Sulfur cinquefoil	*Potentilla recta*
Syrian Bean Caper	*Zygophyllum fabago*
Yellow Starthistle	*Centaurea solstiltialis*
Yellow Toadflax	*Linaria vulgaris*
Category B Weeds	
Carolina Horse-nettle	*Solanum carolinense*
Diffuse Knapweed	*Centaurea diffusa*
Medusahead	*Taeniatherum caput-medusae*
Musk Thistle	*Carduus nutans*
Russian Knapweed	*Acroptilon repens*
Sahara Mustard	*Brassica tournefortii*
Scotch Thistle	*Onopordum acanthium*
White Horse-nettle	*Solanum elaeagnifolium*
Category C Weeds	
Black henbane	*Hyoscyamus niger*
Canada Thistle	*Cirsium arvense*
Green Fountain grass	*Pennisetum setaceum*
Hoary cress	*Cardaria draba*
Johnson grass	*Sorghum halepense*
Perennial pepperweed	*Lepidium latifolium*
Poison Hemlock	*Conium maculatum*
Puncture vine	*Tribulus terrestris*
Salt cedar (tamarisk)	*Tamarix spp*
Water Hemlock	*Cicuta maculata*

Southern Nevada rangelands are being impacted by invasive, nonnative vegetation (weeds). The BLM's Las Vegas Field Office has prepared the Las Vegas Field Office Noxious Weed Plan (Bartz, 2006) to provide guidance for an active integrated weed management program using best management practices. The practices originated from a cooperative effort between BLM and other federal agencies that produced Partners Against Weeds (BLM, 2007). The BLM's Las Vegas Field Office Noxious Weed Plan will narrow that focus as it dovetails with the Partners Against Weeds action plan. Weeds are seen as a major threat to ecosystem health in southern Nevada. The presence of weeds in any landscape increases the interspecific competition for resources. In most situations, weeds out-compete native plants and displace

them. As such, specific mitigation measures must be taken to minimize the inadvertent transportation of noxious weed seeds and the resultant establishment of noxious weeds.

The management of weeds is further guided by the Las Vegas Resource Management Plan, which identifies two objectives for resource management involving weeds: (1) RP-1-f., which states, "Use integrated weed management techniques to control and eradicate tamarisk, such as burning, chemical, biological or mechanical treatments, where potential for treatment is good. Rehabilitate the area with native species to help reduce the potential for tamarisk re-establishment and improve ecosystem health." (2) VG1, which states, "Maintain or improve the condition of the vegetation on public lands to a Desired Plant Community or to a Potential Natural Community." The Las Vegas Field Office Noxious Weed Plan was approved on December 18, 2006.

Based on the Las Vegas Field Office Noxious Weed Plan, a project-specific Noxious Weed Plan will be established in future efforts and will be included with the Construction Mitigation and Restoration Plan in the Environmental Compliance Plan for the proposed Searchlight Wind Energy, LLC Energy Facility project. The plan will include project-specific stipulations that will attempt to control the establishment and spread of Nevada-listed noxious weeds result from transfer during construction and operation of the proposed Wind Energy Facility.

5.1.7 Wildlife

The proposed ROW occurs in typical desert upland habitat that supports various small mammals, reptiles, invertebrates, and birds. Mojave Desert vegetation occurs throughout the ROW and supports a wide variety of animals. However, few wildlife species were observed during the initial field survey associated with meteorological tower ROW permitting. Other species that might occur in the ROW are summarized in Table 5-4.

Table 5-4. Wildlife Species Not Discussed Previously that May Occur in the Searchlight Wind Energy, LLC Energy Facility ROW.

Scientific Name	Common Name
Mammals	
Dipodomys spp.	Kangaroo rat
Sylvilagus audubonii	Desert cottontail
Ammospermophilus leucurus	White-tailed antelope ground squirrel
Reptiles	
Crotalus scutulatus	Mojave-green rattlesnake
Uta stansburiana	Side-blotched lizard
Birds	
Aquila chrysaetos	Golden eagle
Falco mexicanus	Prairie falcon
Accipiter striatus	Sharp-shinned hawk
Buteo jamaicensis	Red-tailed hawk
Toxostoma crissale	Crissal thrasher
Spizella breweri	Brewer's sparrow
Amphispiza belli	Sage sparrow
Amphispiza bilineata	Black-throated sparrow
Zonotrichia leucophrys	White-crowned sparrow
Callipepla gambelii	Gambel's quail
Invertebrates	
Aphonopelma chalcodes	Desert tarantula

Impacts to wildlife associated with the construction and operation of the proposed project will be mitigated through cooperative efforts among Searchlight Wind Energy, LLC, the BLM, and the construction and operations contractors. Future permitting efforts, including detailed studies of plant and wildlife species present or that may occur in the ROW, will serve to inform best management practices and specific stipulations that will mitigate impacts.

5.1.8 Archaeological, Cultural, and Historical Resources

Cultural Resources and Native American relations concerns are the two critical elements of the human environment analyzed in this section. These resources and concerns are managed in compliance with NEPA and with Section 106 of the National Historic Preservation Act (NHPA) of 1966 and its implementing regulations (36 CFR 800, as amended in 1999). Section 106 requires federal agencies to consider the effects of their actions on historic properties or those properties listed in or eligible for nomination to the National Register of Historic Places (NRHP). In addition, the Advisory Council on Historic Preservation must be provided with a reasonable opportunity to comment on such undertakings. To determine whether an undertaking could affect historic properties, it is standard practice to conduct a cultural resources inventory and evaluate identified resources against criteria for the NRHP. Although compliance with Section 106 is the responsibility of the lead federal agency, others can be authorized to assist the agency.

According to Section 106 of NHPA, "an undertaking has an effect on a historic property when the undertaking may alter characteristics of the property that may qualify the property for inclusion in the National Register" (36 CFR 800.9[a]). An effect is considered adverse when the effect on an NRHP-eligible property may diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects on historic properties include the following:

- Physical destruction or alteration of all or part of the property;
- Isolation of the property from, or alteration of, the property's setting when that character contributes to the property's qualifications for listing in the NRHP;
- Introduction of visible, audible, or atmospheric elements that are out of character with the property or that alter its setting;
- Neglect of a property, resulting in its deterioration or destruction; or
- Transfer, lease, or sale of the property (36 CFR 800.9).

Searchlight Wind Energy, LLC will assist the BLM in evaluating potential impacts to cultural resources associated with the proposed Searchlight Wind Energy, LLC Energy Facility. The area of potential effect (APE) for the project will include all surface disturbances in the ROW, as well as potential visual impacts to cultural resources to a distance to be determined through coordination with the BLM archaeologist for the Las Vegas Field Office. Impacts to cultural resources will be evaluated through archival research and an archaeological field investigation.

Literature and Records Search

Records research will be conducted by a qualified cultural resources contractor at the Southern Nevada Archaeological Archive at the Harry Reid Center for Environmental Studies at the University of Nevada, Las Vegas. An in-house record search will be conducted to review all cultural resources reports and recorded archaeological sites within a 1-mile radius of the APE to be established for the Searchlight Wind Energy, LLC Energy Facility or to an alternate distance determined through coordination with the BLM.

In addition to the review of available survey reports and site records, the search will include a review of the NRHP, the Nevada State Register of Historic Places, Historical Resources of Clark County, and historical maps (e.g., historical quadrangle maps, 1884-1885 Plat Maps, 1905 Denny's Map of Searchlight Area, 1905 Denny's Prospector Map, and 1931 Geological Map of the Main Part of the Searchlight District, Clark County, Nevada). Finally, a review of the Nevada Cultural Resources Information System (NVCRIS), an electronic database of the Nevada State Museum and SHPO, will be conducted. Additional resources with the potential to illuminate potential impacts to cultural resources will also be reviewed at the request of BLM or other stakeholders.

Archaeological Surveys

A qualified cultural resources contractor will conduct a Class III Cultural Resource Inventory (BLM Cultural Resources Inventory General Guidelines, 1990) of the established APE at the Searchlight Wind Energy, LLC Energy Facility. The survey will identify cultural resources within the project's APE via pedestrian survey.

Archaeological resources encountered during the survey will be recorded on the state-approved Intermountain Antiquities Computer System (IMACS) site form. Site boundaries, features, artifact concentrations, and disturbances will be recorded with a global positioning system (GPS) device capable of sub-meter accuracy and will be accompanied by sketched notes. Each site, its features, and the surrounding area will be photographed with a digital camera. Findings will be detailed in a BLM Cultural Resources Report.

Traditional Cultural Properties

Traditional Cultural Properties may be present in or near the proposed Searchlight Wind Energy, LLC Energy Facility ROW. Traditional Cultural Properties may generally be defined as a property that is eligible for inclusion on the NRHP because of its association with cultural practices or beliefs of a living community that are important in maintaining the continuing cultural identity of the community. Traditional Cultural Properties are afforded the same protection under the law as significant archaeological sites.

Traditional Cultural Properties are often hard to recognize and may not come to light through archeological or historical surveys. The existence or significance of such locations can often only be ascertained through land use research, interviews, or consultation with traditional cultural practitioners. Literature and records research may reveal Traditional Cultural Properties in or near the ROW, but additional identification efforts may be necessary after consultation with the SHPO and local Native American tribes.

Native American Consultation

Pursuant to NEPA, NHPA, or state requirements, a Native American consultation will be initiated early in the development decision-making process. BLM will conduct a government-to-government Native American consultation.

5.1.9 Noise

The Searchlight Wind Energy, LLC Energy Facility will comply with all federal, state, and Clark County requirements with respect to noise levels during construction and operation. Through future environmental review and permitting processes, a site-specific plan for avoiding and/or mitigating noise

impacts will be prepared. project-specific avoidance and mitigation measures will be incorporated into the final design, EIS, and Environmental Compliance Plan.

Most permanent residences close to the proposed turbine locations are in the town of Searchlight. A few additional structures, including potentially permanent residences, outbuildings, and mining infrastructure, are situated on private inholdings and mineral claims within the ROW.

During construction, which is expected to last up to 12 months, short-term noise associated with the project will be generated by onsite construction and by the transportation of workers and equipment. Temporarily elevated noise levels can be expected in the project ROW and along the roads to and from the ROW.

Construction Traffic Noise

The project is estimated to generate a *peak* of approximately 350 one-way trips per day on U.S. Highway 95 and State Highway 164 (based on 75 construction personnel leaving and entering and 100 delivery trucks leaving and entering the project site). The highest noise levels typically occur with earth-moving equipment (bulldozers, excavators, backhoes, etc.) and road-building equipment (compactors, scrapers, graders, etc.). Typical operating cycles may involve one or two minutes at full power operation followed by three or four minutes at lower power settings.

Other Construction Noise

If required, blasting may be an additional source of noise during construction. Blasting times will be limited to the hours between 8 a.m. and 5 p.m. Nearby residents will be notified in advance if blasting will occur. The amount of blasting required, if any, is unknown at this time.

Federal codes, and primarily the Occupational Safety and Health Act of 1970, regulate worker exposure to noise levels, and these would apply during construction and maintenance of the project. These codes limit worker exposure to noise levels of 85 dB or lower over an eight-hour period. In addition, State of Nevada regulations (NRS 244.363) provide for the prevention of excessive noise at the county level. The project will comply with Clark County Development Code 30.68.020, which regulates noise levels by zoning, time of day, frequency, and decibel level. Limitations on noise do not apply to daytime construction activities.

During commercial operation, the wind turbine generators will generate a swooshing sound as the blades pass through the air. The level of this sound diminishes with distance. For a typical configuration, the sound of the wind turbine generators is barely audible at a distance of 1,500 feet under most atmospheric conditions.

5.1.10 Air Quality

During construction, particulates in the air will increase locally as a result of increased airborne dust. Speed limits of 20 mph will be posted and enforced on the project site to limit the amount of airborne dust generated by vehicles. Through future environmental review and permitting processes, a site-specific plan for avoiding and/or mitigating airborne dust impacts will be prepared. Project-specific avoidance and mitigation measures will be incorporated into the final design, EIS, and Environmental Compliance Plan.

Project site roads will be swept or scraped as required to minimize dust and mud deposits, especially at project entrances and watercourse crossings. If necessary, dust suppression may be employed by spraying water onto the project roads to reduce airborne dust.

During operation, the project will generate electricity without air pollution and is expected to result in the overall reduction of an estimated 575,000 tons of carbon dioxide, 900 tons of nitrogen oxide, and 600 tons of sulfur dioxide per year compared with electricity generated by the average fuel mix for the region (EPA, 2007).

5.1.11 Visual Quality

Visual sensitivity is dependent on viewer attitudes, the types of activities in which people are engaged when viewing the project, and the distance from which the project will be seen. Overall, higher degrees of visual sensitivity are correlated with areas where people live, are engaged in recreational outdoor pursuits, or participate in scenic or pleasure driving. Conversely, visual sensitivity is considered low to moderate in industrial or commercial areas where the scenic quality of the environment does not affect the value of the activity.

Visual Resources Management System

To meet its responsibility to maintain the scenic values of the public lands, BLM has developed a multi-staged Visual Resource Management (VRM) system.

The VRM inventory stage involves identifying the visual resources of an area and assigning them to inventory classes using BLM's visual resource inventory process. The visual resource inventory process involves rating the visual appeal of a tract of land, measuring public concern for scenic quality, and determining whether the tract of land is visible from travel routes or observation points. The process is described in detail in BLM's Handbook H-8410-1, Visual Resource Inventory (BLM, 1986). Visual resources are then assigned to management classes with established objectives:

- Class I Objective: To preserve the existing character of the landscape. The level of change to the characteristic landscape should be very low and must not attract attention.
- Class II Objective: To retain the existing character of the landscape. The level of change to the characteristic landscape should be low.
- Class III Objective: To partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate.
- Class IV Objective: To provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape may be high.

The VRM analysis stage involves determining whether the potential visual impacts from proposed surface-disturbing activities or developments would meet the management objectives established for the area, or whether design adjustments would be required. A visual contrast rating process is used for this analysis, which involves comparing project features with the major features in the existing landscape using the basic design elements of form, line, color, and texture. This process is described in BLM Handbook H-8431-1, Visual Resource Contrast Rating (BLM, 1986), which includes the Visual Contrast Rating Worksheet (Form 8400-4).

The Las Vegas Field Office's RMP (BLM 1998) has designated lands in the ROW primarily as VRM Class III (VS-1-b), but also as Class II (VS-1-a). In Class III areas, "authorized actions may alter the existing landscape, but not to the extent that they attract or focus attention of the casual viewer." In Class II areas, BLM manages the land to "retain the landscape's existing character. In these areas, authorized actions may not modify existing landscapes or attract the attention of casual viewer(s). These designations were based on the area's visual sensitivity and are a result of a combination of factors, including the

degree of visitor interest in and public concern for the area's visual resources, the area's public visibility, the level of use by the public, and the type of visitor use the area receives (BLM, 1992).

Visual Impacts

The proposed Searchlight Wind Energy, LLC Energy Facility ROW lies in a classic basin and range landscape that includes large areas of relatively flat land with scattered mountain ranges defining and containing the visual spaces (Figure 5-3). The overall appearance of the landscape is vast and barren, with gray-green, low-growing creosote bush scrub as the dominant vegetation. This low-growing vegetation would not provide any vegetative screening for large structures, like the proposed wind turbine generators. Turbines are planned for flat terrain with mountains as a backdrop, where there would be less visual contrast and higher visual absorption capability. Turbines are also planned for skyline ridges and hilltops, where there would be higher visual contrast and lower visual absorption capability. The existing landscape has been modified through past and current human habitation, highway and roadway development, mining activities, the establishment of transmission line corridors, and other anthropogenic activities (Figure 5-4).

Figure 5-3. Topography and Visual Character of the ROW.

Figure 5-4. Existing Modifications to the Visual Character of the ROW from U.S. Highway 95.

Figure 5-5 presents a zone of visual impact (ZVI) map of the potential line of sight visibility of the proposed turbines within approximately 15 miles of the proposed Searchlight Wind Energy, LLC Energy Facility ROW. In the ZVI map, the background color gradient from black to white indicates the number of turbines that may be visible from the ground location represented by each pixel. The ZVI map presents a conservative assessment of project visibility, as minor topographic variations may not be captured by the digital elevation model from which the ZVI model is derived. Additionally, the ZVI model indicates

visibility across a vast landscape, much of which is not regularly accessed; that is, the ZVI model shows where turbines would likely be visible, not necessarily where they would be regularly seen by the casual observer. The ZVI model does not account for the degradation of turbine visibility that occurs with increasing distance due to scaling, atmospheric effects, and the expansion of a viewer's visual context.

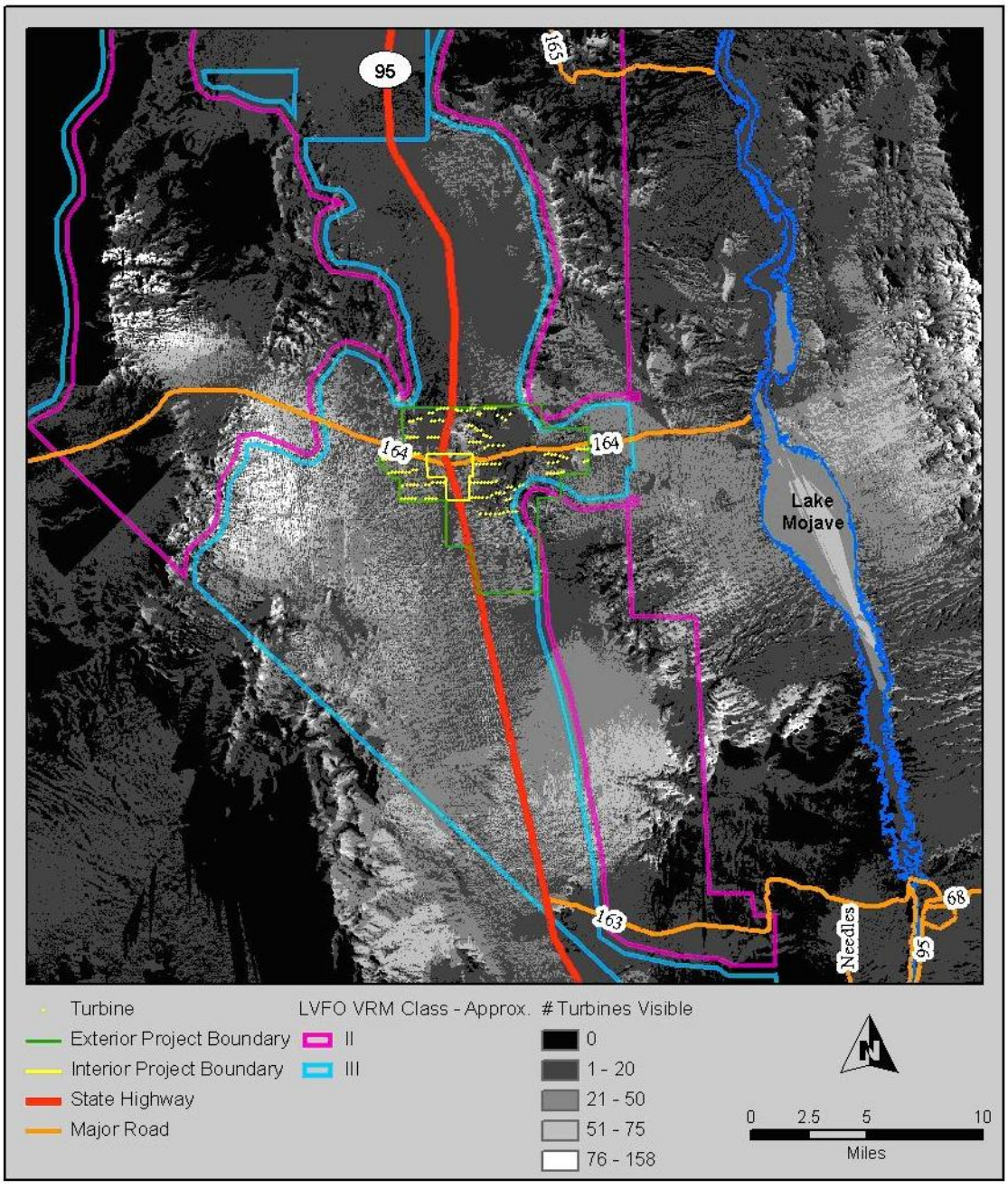

Figure 5-5. Modeled Turbine Visibility within Approximately 15 Miles of the Proposed Searchlight Wind Energy, LLC Energy Facility.

Based on the ZVI map in Figure 5-5 and on an initial visual resources assessment field visit to the ROW in August 2007, key viewsheds in the vicinity of the proposed Searchlight Wind Energy, LLC Energy Facility include the areas visible from the town of Searchlight (including the Harry Reid Elementary

School and other community resources), U.S. Highway 95, State Highway 164, and Lake Mohave, which is a part of the Lake Mead National Recreation Area. State Highway 164 leads to Cottonwood Cove (marina and boat ramp), and because of topographic screening, no turbines are expected to be visible from Cottonwood Cove or Lake Mohave.

To assess the impact on these and other key viewsheds in particular, and on visual resources in general, Searchlight Wind Energy, LLC will engage a qualified visual resources specialist to complete Visual Contrast Rating Worksheets, detailed visibility modeling, and visual simulations from key viewsheds that will show:

- Potential for substantial impacts to scenic resources, such as trees, rock outcroppings, or historic resources along major travel corridors;
- Potential for substantial degradation of the existing visual character or quality of the site and its surroundings; and,
- Potential to create a new source of light or glare that affects day or night time views in an area.

Based on the determination of potential project impacts to visual resources, Searchlight Wind Energy, LLC will modify proposed turbine alignments to reduce visual resources impacts.

5.2 DESIGN CRITERIA (MITIGATION MEASURES) PROPOSED BY APPLICANT AND INCLUDED IN POD

Site orientation efforts for construction staff will include the identification of environmental impacts of construction of the project. The construction manager will establish a method for staff to formally report any issues associated with the environmental impacts, to keep management informed, and to allow for rapid response. It is Searchlight Wind Energy, LLC's intention to implement effective mitigation measures and that impacts are kept to a minimum. If mitigation measures are found to be ineffective, or unanticipated environmental issues arise of the project, the mitigation and monitoring practices will be adapted to address these conditions. Any adaptations will be made with the approval of the BLM Authorized Officer.

5.2.1 Construction in Sensitive Areas

Searchlight Wind Energy, LLC will generate a site-specific Environmental Compliance Plan that will incorporate standard environmental procedures or best management practices. This plan will include any requirements identified during the NEPA process and other environmental compliance processes as conditions of the project permits. A final Environmental Compliance Plan cannot be completed until the end of the environmental review and permitting process. Final Environmental Compliance Plan will be maintained in a reference binder at the project site, copies of which will be given to the contractors working onsite during the construction bid process. Project personnel must be trained about the requirements of the Environmental Compliance Plan prior to working on the project. Copies of the Environmental Compliance Plan will be available at the project site. Contents of the plan will include:

- A summary of environmental permit stipulations;
- Construction Mitigation and Restoration Plan;
- The project SWPPP;
- The project Spill Prevention Control and Countermeasures Plan;

- Environmental consultants' reports;
- Environmental complaints and environmental incident reports;
- Hazardous waste manifest notes; and
- Other environmental documents.

The site orientation process for construction staff will include identifying the environmental impacts of project construction. The construction manager will establish a method for staff to formally report any issues associated with environmental impacts, keep management informed, and allow for rapid response. It is Searchlight Wind Energy, LLC's intention to implement effective mitigation measures and that impacts are kept to a minimum. If mitigation measures are found to be ineffective, or unanticipated environmental issues arise of the project, the mitigation and monitoring practices will be adapted to address these conditions. Any adaptations will be made with the approval of the BLM Authorized Officer.

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6.0 WIND ENERGY FACILITY DECOMMISSIONING

6.1 PROJECT DECOMMISSIONING PLAN

The Searchlight Wind Energy, LLC Energy Facility will operate for its lifetime after which continued operation will not be cost-effective. When the Searchlight Wind Energy, LLC Energy Facility is determined to be no longer cost-effective, the project will be decommissioned, and the existing equipment will be removed. Although project owners may want to work with the BLM to repower the site (i.e., replace existing wind energy project equipment with a new project on the same site), repowering is not considered in this plan.

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

- Wind turbine and meteorological tower removal;
- Pad-mounted transformer, electrical, and communications system removal;
- Structural foundation removal per ROW grant requirements;
- O&M building removal;
- Road removal;
- Regrading; and,
- Revegetation.

Actual decommissioning requirements will be determined during the environmental review and permitting process.

6.1.1 Wind Turbines

The decommissioning activity most noticeable by the general public will be the removal of the wind turbine generators. The disassembly and removal of this equipment will essentially be the same as its installation, but in reverse sequence. The large components that make up a wind turbine generator will be disassembled in the reverse that they were assembled. The rotor hub and blades will be 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 permanent meteorological towers will be disassembled in a similar manner, with a crane first removing the upper tower section moving downward. Once each turbine rotor has been removed, a crew and small crane will disassemble these components into the hub and three loose turbine blades. 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 will then immediately take the component off site. This approach will limit the need for clearing an area around the turbine base to provide just enough area to set down the rotor. When the rotor is disassembled, the blades will be placed into a carrying frame, which can then be loaded onto a truck for removal. The hub can also be removed once it is disassembled from the blades.

6.1.2 Underground Cable

An electrical cable and fiber optic cable are buried between each of the turbine locations. At decommissioning, project owners and BLM will discuss whether they wish 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 will be pulled out. The cables will be cut into manageable sections and removed from the site. The trenches will then be filled with native soil and compacted. The disturbed area will be allowed to revegetate naturally.

6.1.3 Substations

Once the project and transmission line are de-energized, the substation will be disassembled. Major components will be removed from their foundations and placed onto trucks using a small crane. The steel structures and control building will be disassembled and removed from the site. Fencing will be taken down, and fence posts will be removed. Gravel placed in the substation will be removed, and native rock will be scattered on site.

The project owners and the BLM will discuss whether the substation grounding grid is to be removed or left in place. Assuming the transmission line no longer serves a purpose, it will be disassembled and removed. Initially, wires will be removed from the tower hangers and collected for recycling. The tower structures will then be disassembled and removed, including grounding rods to 6 inches below grade. The areas around the poles will be reclaimed.

6.1.4 O&M Building

The O&M building will also be removed. The septic system will be abandoned in a manner consistent with state and local health regulations.

6.1.5 Foundations

When the wind turbine generators, meteorological towers, and substation components are removed from their foundations, the foundations will 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 6 inches below grade. Shallow foundations (like that for the O&M building) will be removed in their entirety. All concrete and steel debris will be removed from the site.

Roads

When the project is decommissioned, the BLM will decide whether project access roads established expressly for the Searchlight Wind Energy, LLC Energy Facility should be removed. To facilitate the various potential uses for the property, the BLM may choose to leave the roads in place. If the roads are left, maintenance of the roads will become the responsibility of the BLM.

Once all the necessary equipment and materials have been removed from an area and the road to that area is no longer needed, the road can be removed. The road surface and bed materials will be removed down to grade. Any materials native to the site will be scattered across the site, and foreign materials will be removed. For areas where equipment or materials are removed, those areas will be regraded 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 regraded to original contours where cuts and fills make such regrading practical. Crane pads will also be regraded.

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