REDACTED
Rocky Mountain Power
Exhibit RMP___(CAT-2)
Docket No. 17-035-40
Witness: Chad A. Teply

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF UTAH

ROCKY MOUNTAIN POWER

REDACTED
Exhibit Accompanying Direct Testimony of Chad A. Teply

Information and Subpart Exhibits for the TB Flats I and TB Flats II Proxy Projects

June 2017

Information and Subpart Exhibits
For the TB Flats I and TB Flats II Proxy Projects

In support of its application, the Company provides the following information and subpart exhibits for the TB Flats I and TB Flats II proxy projects.

(A) The name and address of the applicant:

This information is provided in the application.

(B) The type of plant, property, or facility proposed to be constructed or acquired:

PacifiCorp proposes to construct two separate approximately 250-megawatt wind generation facilities, designated as TB Flats I and TB Flats II, located on a site that consists of approximately 41,000 acres of leased private and state land located in Carbon and Albany Counties, Wyoming. At the time of filing, division of the site into the specific areas for the TB Flats I and TB Flats II projects has not yet occurred.

(C) A description of the facilities proposed to be constructed or acquired, including preliminary engineering specifications in sufficient detail to properly describe the principal systems and components, and final and complete engineering specifications when they become available:

The TB Flats I and TB Flats II facilities will each consist of wind turbine generator(s) ("WTGs"), an electrical collector system, a collector substation, access roads, tower foundations, an operations / maintenance building, fiber optic and / or microwave communication equipment, and supervisory control and operating status data acquisition ("SCADA") control equipment. For the TB Flats I project, the facility includes approximately four miles of an interconnecting 230 kilovolt ("kV") transmission tie-line. The anticipated point of interconnection will be at a new substation on the Shirley Basin-Freezeout transmission line at 230 kV in Carbon County. For the

TB Flats II project, the facility includes approximately four miles of an interconnecting 230 kV transmission tie-line. The anticipated point of interconnection will be at the Shirley Basin substation at 230 kV in Carbon County. The WTGs are anticipated to be purchased from competing suppliers, and the balance-of-project work will be competitively bid and executed under an engineer, procure and construct ("EPC") contract.

An overview of WTG placement across the proposed project sites is presented in Highly Confidential Exhibit CAT2-1. WTG placement will continue to evolve based on several factors, including: land acquisition, field-identified sensitive environmental areas, field-identified cultural areas, landowner commentary received from future WTG placement reviews, definitive geotechnical site studies, aviation / air space impact reviews, and wind resource characteristics.

Highly Confidential Exhibit CAT2-2 is provided as an example of certain extractions from a WTG purchase agreement.

Confidential Exhibit CAT2-3 is provided as an example of a technical specification for the scope of work included in a balance-of-project EPC contract.

(D) List the rates, if any, proposed to be charged for the service that will be rendered because of the proposed construction or acquisition:

The rates proposed to be charged for the service rendered as a result of the project are the applicable standard service schedules, rules, and regulations in the Company's Utah tariffs, and as may be modified and approved by the Commission in the future.

(E) State the estimated total cost of the proposed construction or acquisition:

At the time of filing, the total estimated project cost for the TB Flats I facility is approximately [redacted], including capital surcharge and allowance for funds used during construction. This total estimated project cost includes the associated directly assigned

transmission costs, but does not include incremental interconnection network upgrade costs that are assumed to be the responsibility of the transmission provider.

At the time of filing, the total estimated project cost for the TB Flats II facility is approximately [redacted], including capital surcharge and allowance for funds used during construction. This total estimated project cost includes the associated directly assigned transmission costs, but does not include incremental interconnection network upgrade costs that are assumed to be the responsibility of the transmission provider.

Project cost details for each site are summarized in Confidential Exhibit CAT2-4.

(F) State the manner by which the proposed construction or acquisition will be financed:

The Company intends to finance the proposed wind projects and transmission facilities through its normal sources of capital, both internal and external, including net cash flow from operating activities, public and private debt offerings, the issuance of commercial paper, the use of unsecured revolving credit facilities, capital contributions and other sources. The financial impact of the proposed wind and transmission facilities are a significant investment on the part of the Company, the financial impact will not impair the Company's ability to continue to provide safe and reliable electricity service at reasonable rates. In addition, preapproval of the Company's resource decision provides important regulatory support for the Company's current credit rating. This is described in more detail in Ms. Cindy A. Crane's testimony.

(G) Documentation of the financial condition of the applicant:

Rocky Mountain Power's ("RMP") current financial condition is on file with the Commission in response to the annual reporting requirements and through RMP's semi-annual

earnings reports or its general rate case application. PacifiCorp is financially capable of funding these projects.

(H) The estimated annual operating revenues and expenses that are expected to accrue from the proposed construction or acquisition, including a comparison of the overall effect on the applicant's revenues and expenses:

PacifiCorp provides the economic analysis presented in Mr. Link's testimony and exhibits which show the revenue stream and expenses associated with the proxy wind project and which demonstrates that the project is a risk-adjusted, least-cost alternative to serve customer loads.

The approximate operational, maintenance, and ongoing capital costs expected as a result of each project are presented in Confidential Exhibit CAT2-5. Wind lease royalty costs are included in these amounts. Routine maintenance of the WTGs will be necessary to maximize performance and detect potential malfunctions. Operational and maintenance ("O&M") procedures will be established in accordance with the WTG manufacturer's recommendations. Scheduled maintenance will be conducted approximately every six months on each WTG. Substations, step-up transformers, and pad-mounted transformers will be maintained as part of normal operating activities. Periodic maintenance of underground collection lines will also be required. No substantial quantities of industrial materials will be brought onto or removed from the site during execution of O&M tasks. Project operation will use lubricants, oils, grease, antifreeze, degreasers, and hydraulic fluids, which will be stored in approved containers and located above ground. During operation, it is also anticipated that hazardous waste generation will be either zero or minimal. A minimal amount of energy will be required to operate the project. O&M costs reported include labor, employee expenses, materials, and contracts.

(I) The estimated start and completion dates of the proposed construction or date of acquisition:

PacifiCorp proposes to begin engineering and construction of the project in April 2018. The proposed project commercial operation (in-service) operating date is November 2020, under normal: construction circumstances, weather conditions, labor availability, materials delivery, and permit / agreement processing durations. An indicative project execution schedule for each project is provided as Confidential Exhibit CAT2-6.

(J) A description of the proposed site, including the county or counties in which the facility will be located, with a metes and bounds description, and a description of the terrain where the facility will be constructed:

For both projects, the site footprint spans [redacted]. The town of Medicine Bow is located [redacted] south of the project south boundary. The project site varies in elevation, with a representative elevation of approximately 6,700 feet above mean sea level. Mountain elevations in the area rise to approximately 8,300 feet. The site drainage follows the path of Muddy Creek and tributaries, which are tributary to the Medicine Bow River that joins the North Platte River at the Seminoe Reservoir located to the northwest. Highly Confidential Exhibit CAT2-7 presents a map of area surface ownership, along with a table that provides the legal description of the project location.

(K) A geological report of the proposed site, including foundation conditions, groundwater conditions; operating mineral deposits within a one-mile radius and a topographical map showing the area within a five-mile radius:

Confidential Exhibit CAT2-8 is a geotechnical report for the Dunlap Ranch Wind Energy facility and is provided now as proxy geological and foundation information for the TB Flats I and TB Flats II facilities. Regional geologic conditions are summarized within the Dunlap geotechnical report.

Also, according to the U.S. Geological Survey Digital Geologic Map of Wyoming, the project area intersects fifteen geologic formations. These include the: Chugwater Formation, Clovery Formation, Ferris Formation, Frontier Formation, Goose Egg Formation, Lewis Shale, Medicine Bow Formation, Mesaverde Formation, Mowry Shales, Niobrara Formation, Steele Shale, Wind River Formation, Sundance Formation, Tensleep Sandstone Formation, and Amsden Formation.

The project area is anticipated to be within the Lower Cretaceous aquifer. Groundwater wells in the area varies in depth from 45 to 99 feet below ground surface ("bgs"), with well static water levels ranging from three to 20 feet bgs.

PacifiCorp will continue to assess the impacts of any operating mineral deposits approximately within a one mile radius of the facility. This project is not expected to affect operating mineral deposits or oil and gas leases.

A topographical map showing the terrain of the surrounding area within a five-mile radius of the facility is provided as Confidential Exhibit CAT2-9.

(L) A description of and plans for protecting the surrounding scenic, historical, archeological and recreational locations; natural resources; plant and animal life; and land reclamation, including: (I) A general description of the devices to be installed at the major utility facility to protect air, water, chemical, biological and thermal qualities; (II) The designed and tested effectiveness of such devices; and (III) The operational conditions for which the devices were designed and tested:

Confidential Exhibit CAT2-10 provides information on nearby area scenic byways, recreational locations, national parks, and state parks; visual simulation photos of the completed project areas. To the east of the project site, located along Wyoming Highway 487, is the historic Sand Creek Massacre Trail. The trail was dedicated on August 16, 2006. The trail exists in Wyoming as a memorial to the Arapaho and Cheyenne who lost their lives at the Sand Creek Massacre in Colorado in 1864. Impacts to visual resource concerns should be minimal because of the rural setting of the project. The WTGs are not anticipated to significantly degrade the surrounding scenic quality of the area.

PacifiCorp has preliminarily sited project components to mitigate potential environmental and natural resource impacts in the project area. This effort will continue as details for each project emerges.

Highly Confidential Exhibit CAT2-11 provides information on known cultural and paleontological resources at the project sites. The preliminary project layout has been arranged to avoid impacts to cultural resources. Additionally, no project-related features will be developed in close proximity to known cultural resources. As part of PacifiCorp's plan for protecting the environment, sensitivity practices would be adhered to and any cultural resources would be afforded appropriate protection if discovered during design and construction.

Each project has the flexibility to "microsite" major project features to avoid or significantly reduce impacts to jurisdictional waters of the U.S. and wetlands. More importantly, no adverse impacts to wetland and water resource bodies are anticipated for these projects. Any impact to wetlands and the waters of the U.S., should they arise, will be minimized using best management practices.

The project area lies within the Rolling Sagebrush Steppe, Foothill Shrublands, and Low Mountains Ecoregions. Within these areas, Wyoming big sagebrush, rabbitbrush, prickly pear, wheatgrass, and fescues are common. In rock outcrop areas, juniper and mountain mahogany are also expected. The lowland plain zones, a variable brush layer of tall big sagebrush, greasewood, bunchgrasses, forbs, and prickly pear have been observed. In upland areas, mountain big sagebrush, mountain mahogany, bunchgrasses, forbs, and prickly pear / pincushion cacti have been observed. Occasionally, more diverse riparian communities are present along spring-fed draws, where red willow, chokecherry, currants, various tall grasses, various reeds, forb varieties, thistle, Indian paintbrush are present. Currently, no rare or unique vegetative communities are documented or have been currently mapped within the project area. Therefore, it is not anticipated that each project will contribute to degradation of these resources.

Wild animals including mule deer, whitetail deer, pronghorn antelope, coyotes, chipmunks, prairie dogs, ground squirrels, and rattlesnakes have been observed. Birds including red-tailed hawks, golden eagles, bald eagles, nighthawks, sparrows and various songbirds have been observed. Construction of the project will potentially cause temporary displacement of individuals for some wildlife species that would move on in response to project activities, and lead to permanent impacts to wildlife.

Estimated bird mortality at the site would likely be similar to, or less than, other wind generation facilities located in the area.

No currently occupied greater sage-grouse leks are located within project area.

PacifiCorp will continue to collect bat data within the proposed project area.

Wildlife and plant species of potential concern that continue to be assessed are presented in Confidential Exhibit CAT2-12, including U.S. Fish and Wildlife Service listed species, Wyoming Game and Fish Department species of greatest conservation need, and Bureau of Land Management sensitive species.

At the end of project life, PacifiCorp will have reserved funds in its asset retirement obligation ("ARO") account and will use ARO funding to restore the site to near natural conditions.

Lands disturbed during construction would be reclaimed to current conditions to the extent practicable. Ground disturbance would be minimized and best management practices employed by the construction contractors to minimize environmental impacts. PacifiCorp would also employ an environmental inspector(s) to ensure that environmental considerations, and any unforeseen environmental incidents, are appropriately addressed. This individual would ensure prompt and appropriate response to any identified non-compliance situations and ensure environmental protections are appropriately implemented. Periodic environmental audits of the site will also be conducted by PacifiCorp affiliated personnel that are independent of the project team.

During construction, each on-site contractor will be expected to develop, publish, and orchestrate a site and project specific environmental protection plan.

Site specific wildlife management plans will be developed and implemented.

(M) A description of any potential safety hazards:

Prevention of safety hazards and impacts from failure of the project's components will be

achieved by a combination of planning and controlled site access. By following industry guidelines and WTG certification processes, the most safe and reliable facility will be constructed. WTGs are equipped with multiple safety systems as standard equipment. For example, rotor speed is controlled by a redundant pitch control system and a backup disk brake system. Critical components have multiple temperature sensors and a control system to shut the system down and take it off-line if overheating conditions are detected. Lightning protection is a standard feature on the WTGs, and a specially engineered lightning protection and site grounding system will be installed for the project.

Turbine towers, tower foundations, and above-ground transmission line support structures will be designed according to applicable building codes and nationally accepted design standards to avoid failure or collapse. The selected WTG and tower combination will be subjected to engineering review to ensure that the design and construction specifications are appropriate for the project. This review will include consideration of code / nationally accepted design standard requirements under various anticipated worst case loading conditions and will provide a high degree of confidence in the structural adequacy of the towers. The WTGs have been preliminarily sited at locations which exceed a reasonable set-back of over one tip-height.

During active construction, PacifiCorp will follow the manufacturers' recommended handling instructions and erection procedures to prevent material damage to towers or blades that could lead to failure. In addition, certification of the WTG to the requirements of the *International Electrotechnical Commission ("IEC") 61400-1* standard will ensure that the static, dynamic, and defined-life fatigue stresses in the blades will not be exceeded under the combined load combinations expected at the project site. The standard includes safety factors for normal,

abnormal, fatigue, and construction loads. This certification, together with regular periodic inspections, will give a high level of assurance against blade failure during operation.

The WTGs will be sited at locations that exceed a reasonable set-back distance to safeguard against ice throw. Ice throw over long distances has not been documented as a hazard, and no ice throw injury has been reported from existing wind generation projects. Icing is a rare event, and the turbines for this project will be situated in a remote area.

During construction, planned construction safety controls include: (1) a "PacifiCorp Safety Plan," and (2) the EPC contractor's "Site Specific Safety Plan."

The feasibility of each project site from an aviation and airspace point of view is presented in Confidential Exhibit CAT2-13. The WTGs will be grouped in strings, and some of the WTGs will include aviation warning lights, as required by the Federal Aviation Agency ("FAA"). The number of WTGs with lights and the lighting pattern of the WTGs will be determined through collaboration with the FAA.

(N) A description of the real property, fuel and water requirements, including any source of water along which the major utility facility will be constructed or from which it will obtain or return water:

There are no fuel, minerals, or process water requirements for this project.

The projects will be constructed in the vicinity and above the Medicine Bow River drainage.

At the time of this filing, it is anticipated that during construction of the projects, water will be obtained from a municipal water source; an existing senior water rights holder and trucked to the site; or a new well with a permit issued by the Wyoming State Engineer's Office to appropriate groundwater. Once available on-site, water will either be put to immediate use or placed in an on-

site temporary water storage tank. Once the project is in operation, only minimal daily domestic water use will be required. The primary domestic water requirement will occur at the operations / maintenance building, and is anticipated to be limited to consumption in restrooms, sinks, washing station(s), showers, internal / external hose use, and as dishwater.

A septic system and drain field for sanitary sewer waste disposal will be provided once the project is operational.

(O) The acquisition status, source and location of real property, right-of-way, fuel and water requirements:

Property and right-of-way acquisition status was mentioned previously. There are no fuel acquisition requirements for these projects. Groundwater use applications will be applied for from Wyoming State Engineer's Office for each new extraction well.

(P) The proposed means of transporting fuel and water requirements:

There is no process related requirement to transport material quantities of fuel and water for these projects.

(Q) A description of all mineral rights associated with the facility and plans for addressing any split-estate issues:

PacifiCorp will not own any of the subsurface rights at the site. The Company does not believe that any subsurface right holder will be able to unreasonably displace the resource or any portion of the resource.

PacifiCorp has completed prudent legal research on its rights as a surface lease holder, as compared to those of subsurface right holders, and is comfortable that the law does not allow subsurface right holders to unilaterally displace the Company's facilities and that any subsurface

right holder would be required to enter into good faith negotiations to reasonably accommodate its subsurface extraction objective.

(R) A statement setting forth the need for the facility in meeting present and future demands for service in Utah and other states:

Development of the proposed wind generation facilities in compliance with regulatory requirements is the risk-adjusted, least-cost alternative to meet service obligations in Utah and other states as represented in the Company's testimony and exhibits. The Company's forward looking generation planning activities are further described in the Company's 2017 IRP in compliance with Commission Rules.

(S) A description of the commodity or service the facility will make available:

The project will generate electricity using wind as the renewable energy source. Fossil fuel consumption and waste residual disposal obligations will be avoided.

(T) A statement of the facilities effect on the applicant's and other systems' stability and reliability:

Each project is not expected to adversely affect the quality, stability, and reliability of the PacifiCorp transmission system or that of other entities. A large generator-interconnection "Facilities Study Report" is provided as Confidential Exhibit CAT2-14 that summarizes the expected impact for the TB Flats I facility.

A large-generator interconnection "Facilities Study Report" is provided as Confidential Exhibit CAT2-15 that summarizes the expected impact for the TB Flats II facility.

(U) The status of satisfying local, state, Tribal or federal governmental agency requirements. The applicant shall immediately fill all agencies' final orders:

A list of the local, state, Tribal, and federal governmental agencies having requirements

known at the time of this application, which PacifiCorp must meet in connection with the construction and operation of each project is listed, along with their timing and status, in Confidential Exhibit CAT2-16. Any unforeseen permit requirements will be adequately addressed.

By applying to and working with the various agencies for the construction / operation permits and the Commission, pursuant to Commission rules, the major regulatory requirements and critical reviews for the project are being addressed. PacifiCorp's contractors may provide certain permits including permits for construction storm water pollution prevention control, compliance with building regulations through the Carbon County Planning and Zoning Commission, Albany County Planning and Zoning Commission, sanitary sewer extensions, and requirements of the Wyoming Department of Transportation. PacifiCorp will monitor and audit the successful completion, maintenance and closeout of all contractor supplied permits.

The following documents included in Exhibit RMP___(CAT-2) are confidential or highly confidential in their entirety:

Highly Confidential Exhibit CAT2-1	TB Flats Proxy WTG Site Layout
Highly Confidential Exhibit CAT2-2	WTG Scope of Study Example
Confidential Exhibit CAT2-3	Balance of Plant Scope of Work Template
Confidential Exhibit CAT2-4	TB Flats I and TB Flats II Proxy Capital Costs Detail
Confidential Exhibit CAT2-5	TB Flats I and TB Flats II Proxy Incremental O&M and Ongoing Capital Costs Detail
Confidential Exhibit CAT2-6	TB Flats Indicative Project Execution Schedule
Highly Confidential Exhibit CAT2-7	TB Flats Preliminary Project Map
Confidential Exhibit CAT2-8	TB Flats Proxy Geotechnical Report
Confidential Exhibit CAT2-9	TB Flats Preliminary Topographical Map
Confidential Exhibit CAT2-10	TB Flats Preliminary Scenic Byways, Recreational Areas, National Parks, and State Parks Review
Highly Confidential Exhibit CAT2-11	TB Flats Preliminary Cultural and Paleontological Resources Review
Confidential Exhibit CAT2-12	TB Flats Preliminary Wildlife and Plant Species of Potential Concern Review
Confidential Exhibit CAT2-13	TB Flats Preliminary Aviation and Airspace Review
Confidential Exhibit CAT2-14	TB Flats I Interconnection Facilities Study
Confidential Exhibit CAT2-15	TB Flats II Interconnection Facilities Study
Confidential Exhibit CAT2-16	TB Flats Preliminary Local, State, Federal, and Tribal Requirements Review

Note: The confidential and highly confidential exhibits referenced above are provided subject to Utah Public Service Commission Rules R746-1-602 and 603.

The highly confidential exhibits contain commercially sensitive information which is considered business confidential information subject to Utah Code 63G-2-305(2) and 63G-2-305(3) to protect it from a Government Records Access and Management Act (GRAMA) request. The Company requests special handling. Please contact Bob Lively at (801) 220-4052 to make arrangements to review.