APPENDIX A

PROCEDURES & REQUIREMENTS

for

OKANOGAN PUD ELECTRIC SYSTEM INTERCONNECTION

Version 5.6
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DEFINITIONS

For industry standard definitions of electric industry terminology, please refer to: The New IEEE Standard Dictionary of Electrical and Electronic Terms, ANSI / IEEE Std 100-1992 or the latest version.

For the purposes of this document the following definitions apply:

Bonneville: The Bonneville Power Administration, a federal power marketing agency responsible for, among other things, operating High Voltage transmission facilities and a Balancing Authority area in the Pacific Northwest. Bonneville acts as Planning Coordinator, Transmission Service Provider and Transmission Operator for Okanogan.

Bonneville System: The integrated electrical transmission, control area, and generation facilities operated by Bonneville.

Connection and Operating Agreement: The document signed between Okanogan PUD and the Project Sponsor and/or interconnecting utility for the electrical connection between both parties.

Connection Point: The physical location on the power system of the change of ownership between Okanogan PUD and the Project Sponsor and/or Interconnecting Utility.

Connection Study: A study of the electrical effects of a proposed Generation – Transmission Connection and/or Interconnection Project connected to the Okanogan PUD System, along with the determination of facility additions and associated costs necessary to maintain the reliability of the Okanogan PUD System and surrounding electric systems, as well as verification that all technical requirements in the document are properly addressed.

District: Public Utility District No. 1 of Okanogan County (Okanogan PUD).

Douglas PUD: Public Utility District No. 1 of Douglas County, a Washington State Public Utility District responsible for the planning and operation of certain High Voltage & distribution facilities located in and around Douglas County, Washington. Douglas PUD acts as Okanogan PUD's Balancing Authority. .

Douglas PUD System: The integrated electrical transmission, control area, and generation facilities operated by Douglas PUD.

Okanogan PUD: Public Utility District No. 1 of Okanogan County, a Washington State Public Utility District responsible for the planning and operation of certain High Voltage & distribution facilities located in and around Okanogan County, Washington.

Okanogan PUD System: The integrated electrical High Voltage and distribution facilities owned by Okanogan PUD, including primarily 115 & 13.2 kV lines and stations.

Generation – Distribution Connection: Technical Connection Requirements for End-User Facilities and Small Generation Facilities apply to generation Projects connected to the low-voltage side of a new or existing customer transformer that was originally designed to serve retail load, and having generating capability of greater than 100 kW, but less than i) 5 MW; and ii) 50% of the customer transformer light load.

Generation – Transmission Connection: Technical Connection Requirements for Generation & Interconnection Facilities apply to generation Projects having generating capability in excess of 25 kW and that do not otherwise meet the criteria for "Generation – Distribution Connection".

High Voltage: Nominal operating voltages above 34.5 kV (e.g. 115 kV) are considered as "High Voltage".

Interconnection: High Voltage or distribution system tie point between two Balancing Authority areas.

Interconnecting Utility: The utility that owns the High Voltage or distribution system that connects a Project to Okanogan PUD's System at the Connection Point.

Load Delivery Project: Technical Connection Requirements for End-User Facilities and Small Generation Facilities apply to end-user loads with a Maximum Demand in excess of 1 MW that are connected to the Okanogan PUD System at a voltage of 115 kV and any Interconnecting Utility load that is connected to the Okanogan PUD System regardless of voltage.

NERC: North American Electric Reliability Corporation and its successors.

NERC Reliability Standards: Standards and criteria for the reliable operation of the North American electric power system that have been adopted by the NERC Board of Trustees and are applicable to Okanogan PUD, Bonneville, and the Project.

Project: The End-User, Interconnection, or generation facility and all equipment associated with integration of the Project up to the Connection Point with Okanogan PUD High Voltage & distribution facilities. None of the facilities that make up the Project are owned or maintained by Okanogan PUD.

Project Operator: The entity that operates a End-user, Interconnection, or generation facility.

Project Sponsor: The company that owns and/or develops a new End-User, Interconnection or generation facility.

Protection Station: Facility that satisfies the requirements necessary to provide complete protection for Okanogan PUD's system immediately beyond the Connection Point on Okanogan PUD's side instead of the Project Sponsor's side.

Prudent Electric Utility Practices or Prudent Utility Practice or Prudent Engineering Practices: The generally accepted design, practices, methods, and operation of a power system, to achieve safety, dependability, efficiency, and economy, and to meet utility and industry codes, standards, and regulations.

SCADA (Supervisory Control and Data Acquisition): A system of remote control and data acquisition used to monitor and control the High Voltage and distribution system.

System Impact Study: A study of the electrical effects of a proposed Generation – Distribution Connection and/or End-User Project connected to the Okanogan PUD System, along with the determination of facility additions and associated costs necessary to maintain the reliability of the Okanogan PUD System and surrounding electric systems, as well as verification that all technical requirements in the document are properly addressed.

WECC: Western Electricity Coordinating Council or its successor, which is responsible for over-seeing the reliability of the Western Interconnection.

Western Interconnection: The interconnected electric systems of the western portions of the United States, Canada, and Mexico, which operate synchronously with each other.

Within metered boundary of Balancing Authority Area: All new or materially modified Facilities must be within the metered boundary of a Balancing Authority Area.

1.0 Introduction

These procedures and requirements shall apply to all new Projects that wish to connect to the Okanogan PUD System. Additionally, these requirements shall apply to all facility expansions or material modifications of existing facilities currently connected to the Okanogan PUD System.

Note: generating facilities with peak generating capability less than 100 kW should follow the procedures contained in Okanogan PUD's "Interconnection Standards For Customer-Owned, Grid Connected Electric Generating Systems of 100kW or Less" and new end-user facility loads with Maximum Demand less than 1 MW should follow the procedures contained in Okanogan PUD's Electric Rate Schedules.

The connection to the Okanogan PUD System of a generator, large load, or foreign utility facility may have a significant impact on the reliable operation of not only the Okanogan PUD System, but possibly the Douglas PUD System and the Bonneville System. For this reason, Okanogan PUD must analyze the effects of any Project proposal prior to connecting the Project to the system. The analysis may include power flow, stability, fault current analysis of existing equipment as required to identify overloading problems and voltage violations as outlined in the accompanying documents.

The Okanogan PUD System interconnects with the Douglas PUD System and the Bonneville System at various locations. Douglas PUD also serves as the Balancing Authority for the Okanogan PUD System. Accordingly, larger Projects connecting to the Okanogan PUD System could have an impact on the Bonneville System and/or the Douglas PUD System, as well as Douglas PUD's Balancing Authority area. As a result, a Project may also be subject to all or portions of Douglas PUD's "Facility Connection Requirements", Bonneville's "Line and Load Interconnection Procedures", "Generator Interconnection – Large" (Business Practice), and "Technical Requirements for Interconnection with the BPA Transmission Grid". The Project location, interconnection voltage, transmission access requirements, and capacity will dictate the extent to which the Douglas PUD and Bonneville procedures and technical requirements apply to a given Project. In addition, all new or materially modified Facilities must be within the metered boundaries of a Balancing Authority Area. Okanogan PUD will work with the Project Sponsor, Douglas PUD, and

Bonneville to resolve any discrepancies arising from the use of multiple procedures and technical requirements applicable to a given Project.

The Project Sponsor must follow standardized procedures to initiate and complete required electric system studies:

Connection Study: Applicable to Generation – Transmission Connection and Interconnection Projects. The Connection Study consists of two phases – a Feasibility Study and a more detailed Connection Study. These studies will determine the electrical impact of connecting the Project to the Okanogan PUD System.

System Impact Study: Applicable to Generation – Distribution Connection and End-User Facility Projects. This study will determine the electrical impact of connecting the Project to the Okanogan PUD System.

All requests for connections will be studied similarly and in the order received based on the date of receipt of the Connection Study or System Impact Study Agreement with an accompanying, non-refundable check (or electronic transfer of funds) to cover the cost of the Feasibility Study as determined by Okanogan PUD. Upon completion of the Connection Study, Okanogan PUD will determine the total cost of the study and either invoice the Project Sponsor for any study costs that exceed the amount already paid by the Project Sponsor, or credit the Project Sponsor for unexpended funds. Requests for connections are studied independently from one another until such time that a Connection and Operating Agreement is executed.

The Connection Study and System Impact Study use system models of electrical facilities, which either exist or are reasonably certain to exist during the study time frame, and generation facilities, which either exist or are covered by signed Connection and Operating Agreements. The study is not based upon electrical facilities that may be contemplated but are not reasonably certain to exist during the study time frame. Okanogan PUD will have sole discretion to determine what constitutes “reasonable certainty”. The results of the Connection Study or System Impact Study are valid as of the date of the study report. While the Okanogan PUD System is relatively static, Okanogan PUD is not responsible for changes in the generation or transmission facilities which occur subsequent to the date of the study report and which change the results contained therein.

The signing of the Connection and Operating Agreement establishes the Project Sponsor's option to connect to the Okanogan PUD System at the Connection Point but in no way provides for or guarantees transmission service.

The following is a step-by-step guideline for Okanogan PUD and Project Sponsors to use before a project can be connected to the Okanogan PUD System.

2.0 Procedures for Arranging the Study of New Connections

2.1 Application

To request a study for connection, the applicant shall sign the "Connection Study" agreement, Attachment A-1 (for Generation – Transmission Connection and Interconnection Projects), or the "System Impact Study" agreement, Attachment A-2 (Generation – Distribution Connection and End-User Facilty Projects) and return it to Okanogan PUD along with preliminary data and a description (including applicable drawings) of the configuration of the Project to be connected to the Okanogan PUD System. The data required for the detailed Connection Study or System Impact Study is described in the accompanying appendices. If the Project Sponsor does not provide the detailed data at the start of the study process, the study will be canceled and the Project Sponsor must re-submit a new study request. Okanogan PUD will review the completed application, preliminary data, and configuration, and within 30 days, execute the study request by placing it in the Connection Study queue. A Project's place in the Connection Study queue is established upon Okanogan PUD's receipt of a completed Connection Study or System Impact Study agreement.

2.2 Connection Study

A signed Connection Study Agreement initiates a two-part study: the Feasibility Study and a Detailed Connection Study. These studies will determine the impact of connecting to, and operating the Project on Okanogan PUD's System. Okanogan PUD will work with the Project Sponsor, Douglas PUD, and Bonneville to coordinate the Connection Study with any required Douglas PUD and/or Bonneville interconnection studies. If the Project Spon-

sor desires that Okanogan PUD study multiple sites, configurations, load levels, or generation output levels, such alternatives must be included in the Connection Study Agreement, either initially or through amendment to the Study Agreement.

2.2.1 Feasibility Study

The Feasibility Study determines the local area electrical constraints for various generation output levels or end-user load levels, up to the Project Sponsor specified generation output level or end-user load. The generator output level or end-user load levels will be modeled as set forth in the Connection Study agreement.

Okanogan PUD will exercise due diligence to complete the Feasibility Study within 60 days of its receipt of a signed Connection Study Agreement and the required preliminary data. Upon completion of the study, Okanogan PUD will issue a Feasibility Study report to the Project Sponsor. If Okanogan PUD is unable to complete the study within 60 days, Okanogan PUD will notify the Project Sponsor and provide an estimated completion date along with an explanation of the reasons why additional time is required to complete the study.

2.2.2 Feasibility Study Results

The results of the Feasibility Study will be compiled into a report that identifies any electrical constraints associated with various Project generation output levels or end-user facility loads, up to the Project Sponsor specified maximum generation output level or load. A rough cost estimate for relieving each constraint will also be provided. If the constraint has been previously identified in any existing Okanogan PUD transmission or distribution expansion plan, it will be noted as such. Refined estimates on costs and other details, such as schedules and Project Sponsor requirements, will be determined in the Detailed Connection Study and the Facility Study if the Project Sponsor chooses to continue with the study process.

The Project Sponsor has 20 days upon receipt of the Feasibility Study report to notify Okanogan PUD in writing to proceed and to submit detailed data, or to request an extension period, as specified in the Connection Study Agreement. Okanogan PUD will initiate a Detailed Connection Study upon the Project Sponsor’s written request and Okanogan

PUD's receipt of required detailed study data. The Project Sponsor's failure to notify or submit detailed data within 20 days of receipt of the Feasibility Study report will cause Okanogan PUD to place Project Sponsor's project on hold 30 days. If this happens Okanogan PUD will notify the Project Sponsor that the project has been put on hold.

2.2.3 Extension Period/Hold Time

If the Project is placed on hold for failing to provide either detailed data or notification to proceed with the Detailed Connection Study, Okanogan PUD will cancel the study at the end of the 30-day hold period, and the Project Sponsor will have to submit another study request to establish a new queue position.

2.2.4 Detailed Connection Study

The Detailed Connection Study is a refinement of the Feasibility Study. Unlike the Feasibility Study, this study will identify the electrical constraints for a fixed level of generation output into the Okanogan PUD System, or End-User Facility load as specified by the Project Sponsor. Okanogan PUD will use due diligence to complete the required Detailed Connection Study within 60 days of its receipt of both the Project Sponsor's notification to proceed and detailed data. If Okanogan PUD is unable to complete the study within 60 days, Okanogan PUD will notify the Project Sponsor and provide an estimated completion date along with an explanation of the reasons why additional time is required to complete the study. To ensure the integrity of the Connection Study queue, Okanogan PUD's Engineering Department performs each study in the order that the Connection Study Agreements are received. While several studies may be performed concurrently, they are performed independently of one another at the sole option of Okanogan PUD. Studies may be performed either by Okanogan PUD personnel or external contractors.

There are four components to the Detailed Connection Study, which are described in detail in Appendix B-1:

1. Connection Configuration
2. Power Flow, Short Circuit and Stability Analysis
3. Protection
4. Power Quality and Reliability

2.2.5 Detailed Connection Study Results

The Detailed Connection Study report will compile applicable test results. It will also contain a description of the mandatory upgrades and optional enhancements with their planning-level cost estimates, for which the Project Sponsor is responsible. Examples of such upgrades are the re-conductoring of a line section, replacement of an transformer, replacement of circuit breakers, installation of facilities to interconnect to the Okanogan PUD System, etc. A list of assumptions and a preliminary, high-level schedule will also be included.

After the Detailed Connection Study is completed, the Project Sponsor has 20 days to review the results. Within this 20-day period, the Project Sponsor must select the optional upgrades, if any, that it wishes to have installed and request that Okanogan PUD proceed with the Facility Study. Upon Okanogan PUD's receipt of the Project Sponsor's signed Facility Study Agreement, Okanogan PUD will initiate a Facility Study. However, the Project Sponsor has the option of requesting a 60-day extension period for review of the Detailed Connection Study results prior to deciding whether to proceed with the Facility Study. If the Project Sponsor does not submit a signed Facility Study Agreement to Okanogan PUD within 20 days of receipt of the Connection Study report, Okanogan PUD will place the Project on hold for 60 days. If this happens Okanogan PUD will notify the Project Sponsor that the Project has been put on hold.

2.2.6 Extension Period/Hold Time

If the Project is placed on hold for failing to submit a signed Facility Study Agreement, then Okanogan PUD will remove the Project Sponsor from the Connection Study process at the end of the 60-day hold period, and the Project Sponsor will have to submit another study request to establish a new queue position.

2.3 System Impact Study

A signed System Impact Study Agreement initiates a detailed analysis of the electrical impact of connecting to, and operating the Generation – Distribution Connection for End-User Facility and Small Generation Projects on Okanogan PUD's System. If necessary,

Okanogan PUD will work with the Project Sponsor, Douglas PUD and Bonneville to coordinate the System Impact Study with any required Douglas PUD and/or Bonneville interconnection studies. If the Project Sponsor desires that Okanogan PUD study multiple sites, configurations, load levels, or generation output levels, such alternatives must be included in the System Impact Study Agreement, either initially or through amendment to the System Impact Study Agreement. Okanogan PUD will recover all costs associated with the System Impact Study from the Project Sponsor pursuant to the terms of the System Impact Study Agreement.

2.3.1 System Impact Study Process

The System Impact Study determines the local area electrical constraints for various generation output levels or end-use loads, up to the Project Sponsor specified generation output level or end-use load Maximum Demand. The generator output level or end-use load will be modeled as set forth in the System Impact Study agreement.

Okanogan PUD will exercise due diligence to complete the System Impact Study within 90 days of its receipt of a signed System Impact Study agreement and the required preliminary data. Upon completion of the study, Okanogan PUD will issue a System Impact Study report to the Project Sponsor. If Okanogan PUD is unable to complete the study within 90 days, Okanogan PUD will notify the Project Sponsor and provide an estimated completion date along with an explanation of the reasons why additional time is required to complete the study.

2.3.2 System Impact Study Results

The results of the System Impact Study will be compiled into a report that identifies any electrical constraints associated with various Project generation output levels or end-use loads, up to the Project Sponsor’s specified maximum generation output level or end-use load Maximum Demand. A rough cost estimate for relieving each constraint will also be provided. If the constraint has been previously identified in any existing Okanogan PUD transmission or distribution expansion plan, it will be noted as such. Refined estimates on costs and other details, such as schedules and Project Sponsor requirements, will be determined in the Facility Study if the Project Sponsor chooses to continue with the study process.

The Project Sponsor has 20 days upon receipt of the System Impact Study report to notify Okanogan PUD in writing to proceed and to submit detailed data or to request an extension period, as specified in the System Impact Study agreement. Okanogan PUD will initiate a Facility Study upon the Project Sponsor's written request and Okanogan PUD's receipt of an executed Facility Study Agreement and required detailed study data. The Project Sponsor's failure to notify or submit detailed data within 20 days of receipt of the System Impact Study report will cause Okanogan PUD to place Project Sponsor's Project on hold for 30 days. If this happens Okanogan PUD will notify the Project Sponsor that the Project has been put on hold.

2.2.4 Extension Period/Hold Time

If the Project is placed on hold for failing to provide either detailed data or notification to proceed with the Facility Study, Okanogan PUD will cancel the study at the end of the 30-day hold period, and the Project Sponsor will have to submit another study request to establish a new queue position.

3.0 Facility Study: Scoping of Project

Upon completion of the Connection Study or System Impact Study, the Project Sponsor may desire a more definitive cost estimate and scope of work. Project Sponsor execution of a "Facility Study Agreement" (Attachment A-3) initiates a Facility Study, whereby Okanogan PUD's Engineering Department or a Okanogan PUD designated consultant will scope the Project. This Team will refine the cost estimates of the mandatory and the optional, Project Sponsor selected, upgrades identified in the Connection Study or System Impact report. The Engineering Department may also propose alternative solutions to the Project Sponsor that may be more cost-effective. Okanogan PUD will use due diligence to complete the Facility Study within 60 days of its receipt of the Project Sponsor's signed Facility Study Agreement. If Okanogan PUD is unable to complete the study within such time period, Okanogan PUD will notify the Project Sponsor and provide an estimated completion date along with an explanation of the reasons why additional time is required to complete the study. The cost estimate generated by the study will remain valid for 190

days following the completion of the study. The deliverable of this study will be a "Scope Document" that includes:

1) The work scope of the project
    a) Supervisory Control and data Acquisition (SCADA) requirements
    b) Metering requirements
    c) Relay modifications on the Okanogan PUD System
    d) Equipment replacement
    e) Re-conductoring of electrical lines

2) A list of assumptions used in developing the scope
3) An estimated construction schedule
4) A definitive cost estimate (+/- 15%)

The Project Sponsor has 60 days to review the results of the Facility Study. By the end of this review period, the Project Sponsor must commit to mandatory upgrades and the selected optional upgrades, and provide a Reimbursement Agreement or a signed Connection and Operating Agreement with a secured letter of credit to move forward with detailed facility design and construction.

4.0 Project Sponsor's Commitment to Proceed with Project

If the Project Sponsor chooses to proceed with the Project on the basis of the preliminary estimates provided in the Connection Study results, Okanogan PUD will immediately prepare and tender a Reimbursement Agreement for the Project Sponsor to sign. The Reimbursement Agreement (Attachment A-4) authorizes Okanogan PUD to perform detailed engineering design, material procurement, and construction. Included in the Reimbursement Agreement will be the high-level work scope, preliminary cost estimates, method and timing of reimbursement, and a cancellation clause. At this time, Okanogan PUD may, at its sole discretion, also require a secured letter of credit, or other reasonable and adequate security, from the Project Sponsor in order to proceed with the project. The Project Sponsor shall have 30 days from the date of tender of the Reimbursement Agreement to execute the agreement and post any security required by Okanogan PUD.

5.0 Contracts and Agreements

The Project Sponsor shall work with Okanogan PUD's Engineering Department in order to develop a Connection and Operating Agreement. The Connection and Operation Agreement allows a physical connection of the project to the Okanogan PUD System; it specifies the responsibilities and authorities of Okanogan PUD and the Project Sponsor, and the operational terms and conditions that will apply to the connection.

Okanogan PUD will include the Project Sponsor's facilities (including upgrades to which the Project Sponsor has committed) in its short circuit and transient stability models upon signature of the Connection and Operating Agreement.

The results of the short circuit and transient stability analyses are subject to change. They are based upon the current configuration of the Okanogan PUD System at the time of the study. Should others sign Connection and Operating Agreements with Okanogan PUD prior to the Project Sponsor signing its Connection and Operating Agreement, the short circuit and transient stability analyses would have to be repeated with the additional information. Okanogan PUD will inform the Project Sponsor should this situation occur. The load flow analysis portion of the study is not subject to re-study due to the effects of subsequent Project Sponsors' signed Connection Agreements.

Version	Date	Action	Change/Tracking
5.1	12/19/2017	Added version tracking table, tweaked definitions, minor modifications to sections 1, 2.1, 2.2, 2.2.1, 2.2.2, 2.2.4, 2.2.5, 2.3, 3.0 and 5.0	TD
5.2	12/19/18	Review -Corrected Application document name from Appendix A-1 to Appendix E. Added within metered boundaries of Balancing Authority Area to document.	AA
5.3	12/19/2019	Updated Okanogan Sherriff, Spelling	AA
5.4	12/20/2020	No Changes	AA
5.5	12/14/2021	No Changes	DS/AA
5.6	12/19/2022	No Changes	DS/AA