

Facilities Study Report

Version 2.0

[REDACTED] #746

142kW Hydro Facility
Gem County, ID

[REDACTED]

September 9, 2024

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1. Study Overview

1.1 Introduction

██████████ (Seller) contracted with Idaho Power Company (IPC) to perform a Facilities Study (FS) for interconnection of the proposed ██████████ #746 (Project) to IPC's ██████████ distribution line. Seller will operate this generator as a Qualified Facility as defined by PURPA. The total project output as studied is 142 kW.

This Facilities Study Report (FSR) documents the basis for and results of the FS for the Project. The report provides a non-binding estimate of the cost of—and schedule for—equipment, engineering, procurement, and construction work required to physically and electrically connect the Project to the Transmission System. This report satisfies the FS requirements of IPC's SGIP and Generator Interconnections to PURPA Qualifying Facility Sellers (Schedule 72).

This FSR is a study and preliminary evaluation only and does not constitute, or form the basis of, a definitive agreement related to the matters described in this FSR. Unless and until a Schedule 72 Generator Interconnection Agreement (Schedule 72 GIA) is executed by IPC and Seller, no party will have any legal rights or obligations, express or implied, related to the subject matter of this FSR. A Schedule 72 GIA between Seller and IPC will be prepared for the project following finalization of this FSR. The Schedule 72 GIA will be a definitive agreement that contains terms and conditions that supersede this FSR.

1.2 Study Assumptions

This report is based on information available at the time of study. Seller is responsible to check IPC's OASIS site and website regularly for Generation Interconnection and Transmission System updates:

- OASIS (<http://www.oatioasis.com/ipco/index.html>)
- Planning and Electrical Projects (<https://www.idahopower.com/energy-environment/energy/planning-and-electrical-projects/>)

2. Interconnection Facilities and Upgrades

2.1 Seller-Furnished Facilities

General Facility Description

Seller has stated that the proposed Project will consist of a hydrokinetic system in Gem County, Idaho and connect to the 12.5kV distribution system on IPC's [REDACTED] feeder near the [REDACTED] in [REDACTED], Idaho ([REDACTED]). The total project output as studied is 142 kW.

Seller-Furnished Facilities are those portions of the Interconnection Facilities provided by the Seller and include all facilities and equipment located between the Generation Facility and the Point of Change of Ownership (POCO), including any modification, addition, or upgrades to such facilities and equipment. Seller is responsible for funding and constructing Seller-Furnished Facilities, including the gen-tie line and facilities to the POCO.

Seller-Furnished Facilities are located in IPC's [REDACTED] region in Township [REDACTED], Range [REDACTED], and Section [REDACTED] and are approximately [REDACTED] away from the Transmission Provider's Interconnection Facilities. Seller will install disconnect switches, distribution collector system, controllers, appropriate grounding measures, and associated auxiliary equipment. Seller will build facilities to the POCO.

Point of Change of Ownership

The POCO for the Project will be on Seller's side of the fused disconnect switch.

2.2 Transmission Provider's Interconnection Facilities

Transmission Provider's Interconnection Facilities (hereinafter referred to as IPC's Interconnection Facilities) are all facilities and equipment owned, controlled, or operated by IPC from the POCO to the POI, including any modifications, additions or upgrades to such facilities or equipment.

Interconnection Point

The Project's Interconnection Point (POI) will be on IPC's [REDACTED] distribution feeder on IPC's side of the fused disconnect switch.

IPC's Interconnection Facilities

IPC will install facilities that will connect to distribution feeder [REDACTED]. If Seller is going underground to the POCO, IPC will include a pole riser for Seller to install cables to interconnect to the IPC system. If Seller is going overhead to the POCO, it will be at a tension not to exceed the design tension specified by IPC.

The new interconnection package will include two new distribution poles to mount a fused disconnect switch, a metering package including an AMI meter, current transformer (CT), voltage transformer (PT), and riser necessary for the package.

Concrete barriers may be necessary to protect this equipment from local area traffic.

2.3 Distribution Upgrades

Distribution Upgrades are additions, modifications, and upgrades to IPC's Distribution System at or beyond the POI to facilitate interconnection of the Generation Facility. Distribution Upgrades required for this Project include an extension of the [REDACTED] distribution line, which consists of a rebuild of approximately [REDACTED] of existing [REDACTED] line to [REDACTED] from the POI to approximately [REDACTED]. Distribution Upgrades also include the removal of an existing fused disconnect switch ([REDACTED]) and the installation of a new [REDACTED] fused disconnect switch at the distribution tap to the Project.

2.4 Estimated Costs

The following good faith estimates are provided in 2024 dollars and are based on a number of assumptions and conditions. IPC does not warrant or guarantee the estimated costs in the table below, which are estimates only and are subject to change. Seller will be responsible for all actual costs incurred in connection with the work to be performed by IPC and its agents, under the terms and subject to the conditions included in any Schedule 72 GIA executed by IPC and Seller. Costs for any work being performed by Seller are not included.

Full funding of the estimated costs identified below (or as updated in the Schedule 72 GIA) must be received or other arrangements acceptable to IPC must be made with IPC's Credit Department prior to any work commencing on the Interconnection Facilities and/or identified upgrades.

Table 1

Estimated cost of Interconnection Facilities and Network Upgrades.

Description	Ownership	Cost Estimate*
IPC Interconnection Facilities:		
Facilities between the POCO and POI as described in Section 2.2	IPC	\$18,826
Contingency 20%		\$3,765
Overheads 3.5%		\$791
Total		\$23,382
Distribution Upgrades:		
Upgrades to Distribution System as described in Section 2.3		\$108,100
Contingency 20%		\$21,620
Overheads 10.5%		\$13,621
Total		\$143,341
	GRAND TOTAL	\$166,722

3. Estimated Milestones

3.1 Milestones Overview

Seller has requested an In-Service Date of March 21, 2025. IPC has developed the milestone dates in good faith considering many factors, including the requested In-Service Date, known long-lead times, and the schedule of other in-progress projects. The estimated milestone schedule captured in the following table does not align with the requested In-Service Date.

IPC does not warrant or guarantee the estimated milestone dates, which are estimates only. The milestone dates assume, among other things, that materials can be timely procured, labor resources are available, and that outages to the existing transmission system are available to be scheduled. Additionally, there are several matters, such as permitting issues and the performance of subcontractors that are outside the control of IPC that could delay the estimated In-Service Date. For purposes of example only, federal, state, or local permitting, land division approval, identification of Interconnection Facilities location, access to proposed Interconnection Facilities location for survey and geotechnical investigation, coordination of design and construction with Seller, failure of IPC's vendors to timely perform services or deliver goods, and delays in payment from Seller may result in delays of any estimated milestone and the In-Service Date of the project. To the extent any of the foregoing are outside of the reasonable control of IPC, they shall be deemed Force Majeure events.

These milestones will begin, and the milestone schedule referenced below will only be valid, upon receipt of funding from Seller or its authorized third party no later than the date set forth in the ultimate Schedule 72 GIA for such payment. IPC will not commit any resources toward project construction that have not been funded by Seller. Additionally, failure by Seller to make the required payments as set forth in the ultimate Schedule 72 GIA by specified date(s) may result in the loss of milestone dates and construction schedules set forth below.

Table 2
Estimated Milestones

Estimated Date	Responsible Party	Milestone
30 Calendar Days following receipt of draft Schedule 72 GIA	Seller	Project Initiation (all three must be complete to initiate project): <ul style="list-style-type: none"> Executed Schedule 72 GIA IPC receives Notice to Proceed for design, procurement, and construction Construction funding or arrangements acceptable to ICP are made with IPC's Credit Department
3 months following Project Initiation	Seller	Easements and permits procured for IPC site; construction will not begin until easements and permits are in place Detailed in Appendix B attached
6 months following Project Initiation	IPC	Engineering and Design complete

Estimated Date	Responsible Party	Milestone
12 months following Project initiation	IPC	Long Lead Material procured/received
6 months prior to IPC Commissioning	IPC	New generation modeled and submitted to the Western Energy Imbalance Market Failure to submit by given lead time will result in project delay
6 months prior to IPC Commissioning	Seller	Required telecommunication circuits operational and provided to IPC site
180 Calendar Days prior to Trial Operation	Seller	Provide a completed copy of the Small Generation Facility data requirements contained in Appendix 1 of the SGIP
180 Calendar Days prior to Initial Synchronization	Seller	Provide initial specifications for the Seller's Interconnection Facility
90 Calendar Days prior to Initial Synchronization	Seller	Provide final specifications for the Seller's Interconnection Facility
15 months following Project Initiation	IPC	Construction Complete
1 month following Construction Complete	IPC	Commissioning Complete Back feed power is available
5 days after switching request made to IPC Dispatch	Seller	First Energy Date Switch at the POI can be closed to obtain back feed power
TBD	Seller	Initial Synchronization Date Seller Trial Operation begins
30 Calendar Days prior to In-Service Date	Seller	Notify IPC of In-Service Date
10 Business Days prior to In-Service Date	Seller	Provide Certificate of Insurance
Prior to In-Service Date	Seller	Provide as-built or as-tested performance data that differs from the initial Small Generation Facility data requirements contained in Appendix 1 of the SGIP
TBD	Seller	In-Service Date
120 Calendar Days following In-Service Date	Seller	Provide as-built drawings, information, and documents for Seller's Interconnection Facilities

4. Interconnection Details

4.1 Generation Facility

The Generation Facility is Seller's equipment used to produce electric energy at a specific physical location which meets the requirements to be a Qualifying Facility.

Seller's hydrokinetic synchronous reluctance generator (permanent magnet generator) system will be constructed as follows:

1. Three generation stations comprised of in-conduit vertical-axis hydrokinetic turbines and PV inverters:
 - Station 1 is comprised of:
 - [REDACTED] generators
 - [REDACTED] PV inverter
 - Station 2 is comprised of:
 - [REDACTED] generators
 - [REDACTED] PV inverter
 - Station 3 is comprised of:
 - [REDACTED] generators
 - [REDACTED] PV inverter
 - Station 4 is comprised of:
 - [REDACTED] generators
 - [REDACTED] PV inverter
2. A system plant controller will be used to control the inverter system and to implement smart inverter functionality for operating the project within a voltage range and power factor specified by IPC at the POI.

The above-referenced inverters, or equivalent inverters that have the same specifications and functionality as stated above, must be utilized. Additional study and/or equipment may be necessary if a different inverter is utilized that has different specifications and functionality than that which was studied.

4.2 Other Facilities Provided by Seller

Telecommunications

In addition to communication circuits that may be needed by Seller, Seller is responsible to provide the following communication circuits for IPC's use. These circuits can be long-lead items and typically require coordination with third-party telecommunications providers. The Project's in-service date cannot be granted prior to complete circuit acceptance and testing as referenced below.

The Interconnection Facilities site demarcation for the following circuits, as required, shall be at a location in close proximity to IPC's equipment installation, and IPC must approve of the location.

Seller shall provide all the required communications circuits between the Generation Facility site and IPC's operations points (i.e., IPC FEP location, etc.) as specified by IPC.

Refer to Appendix C for Idaho Power Guidelines for Alternative Telecom Service Strategies for the following required circuits.

Dial-Up Circuit

One POTS (Plain Old Telephone Service meeting the technical requirements of TR-NWT-000335:1993; NCI code 02LS2-2wire, loop start, 600 ohm) dial-up circuit for voice communication at the Interconnection Facilities. If the circuit becomes unreliable, Seller will be responsible for the circuit repair. For Projects under 3MW, the POTS line must also be capable of supporting reliable sustained data communications at a minimum of 4800 bps with a modem using V32.bis modulation.

Seller shall provide either a POTS dial-up circuit from a telecommunication carrier or through alternative means. Alternate means could be through, but not limited to, providing a POTS dial-up circuit from Seller's voice communications systems or other voice communications system. Any POTS dial-up circuit provided shall have all its equipment powered from a battery or use an uninterruptible power supply to ensure that the service remains available in the event of a power failure. Any battery or uninterruptible power supply shall be capable of maintaining the POTS service for a minimum of a 2-hour period during a power failure. Seller shall be responsible for the installation, operation, and maintenance of the POTS dial-up circuit. The POTS dial-up circuit shall be available 24 hours a day, seven days a week except for a 2-hour maintenance period, which will be limited to occurring once per calendar month.

Any provided POTS dial-up circuit shall be directly dialable from the public switched telephone network without intermediate steps, such as an operator or other means of connecting the call. This is often referred to as Direct Inward Dialing (DID) in the telecommunications industry. Likewise, dialing out from the POTS dial-up circuit shall be possible without intermediate steps, such as an operator or other means of connecting the call. The ability to dial international numbers is not required.

Reliability and Data Security

Seller is responsible for supplying stable metered AC power during circuit testing and commissioning and battery backed DC power during operation.

Circuit Acceptance and Testing

Circuits with demonstrated reliability issues during commissioning will be required to demonstrate 24 hours of reliable service by Seller prior to final acceptance testing by IPC. Note that installation by a third-party communications provider may take several months, and these services should be ordered well in advance to avoid delaying the project.

Seller or their third-party communications provider may need to install communications equipment (e.g., batteries, multiplexers, etc.) near each terminus of the required communications circuits. If this equipment is required, Seller shall be responsible to install this equipment in locations that are not owned or operated by IPC. If high-voltage protection is required by the communications provider for the incoming copper cable, the high-voltage protection assembly shall be engineered, supplied, and maintained by Seller.

Operational Response

Seller's failure to maintain and/or restore and repair intermittent or non-operational telecommunications circuits may result in disconnection of Seller's Generation Facility until the circuits successfully complete IPC's end-to-end testing.

Seller is responsible for repairing any circuits and contacting any third-party telecom provider as needed. IPC cannot contact third-party telecom providers on behalf of Seller for circuit outages. A third-party telecom provider is expected to have the ability to perform some level of remote circuit testing. If Seller's third-party telecom provider needs access to IPC facilities, they will contact IPC per the contacts in the GIA.

The leased services required by IPC are to be kept separate from any communication services required by Seller. This includes the location where services are handed off from the telecom provider to IPC, also known as the TELCO demarcation. Under no circumstances will any service delivered to IPC's TELCO demarcation be extended beyond the IPC yard ground grid. If Seller requires their own leased services, they must be provided through a separate TELCO demarcation, as noted in Figure 1.

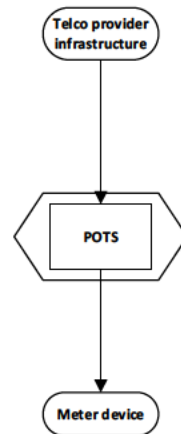


Figure 1
Telecommunications diagram

Ground Fault

Seller will limit the ground fault current to less than 20 amps as measured at the POI.

Local Service

Seller is required to take local service as an IPC retail customer. Seller is responsible to arrange for local service to their site and to coordinate such requirements with IPC so that local service can be provided in accordance with the provisions contained within the applicable service schedule. The service schedule and functional settlement will be determined during construction of the Project.

Property

Seller shall provide IPC an easement for the Interconnection Facilities, including year-round access. Seller shall coordinate with IPC to incorporate enough area for a vehicle to safely access the interconnection site for maintenance into Seller's project site plan and easements. Seller, at its sole cost and expense, will provide IPC documents and services as identified below relating to IPC's land rights required for its Interconnection Facilities.

Land Transaction Documents

Land Transaction Documents in a form approved by IPC that may include, but are not limited to, the following:

- Right of Entry Agreement
- Access Easement
- Easements for distribution service lines, major distribution power lines, and transmission power lines and related ancillary facilities as determined necessary by IPC at IPC's sole discretion, to support the Interconnection Facilities and Seller's development

- Completed Applications with respective fees for Release of Easements and/or Crossing Agreements that may be required for the Project
- Crossing Agreements
- Any other Project-specific documents deemed necessary by IPC

IPC review and approval of the Land Transaction Documents may require six to nine months. Seller is advised to provide all required Land Transaction Documents at the earliest possible time. Refer to Appendix B for a complete reference guide to IPC's Corporate Real Estate Easement Parcel requirements.

Upon IPC approval of all Land Transaction Documents, IPC will provide Seller final form documents for signature by the landowner of record. Seller shall return the original signed and recorded Land Transaction Documents to IPC. All recording and mailing fees shall be paid by Seller. IPC shall provide to Seller electronic copies of all fully executed and recorded Land Transaction documents.

Site Work

Seller will provide property, property access, and site plan. IPC will perform land clearing and grading if necessary for IPC's Interconnection Facilities.

Generator Technical Information and Drawings

During Project design development, Seller shall provide draft design prints containing technical information, including but not limited to impedances and equipment brand and models. After construction, Seller shall submit to IPC all the as-built information, including prints with the latest approved technical information and commissioning test results in accordance with the timing requirements outlined in Attachment 3 to the Schedule 72 GIA.

4.3 Operating Requirements

The Project is required to comply with the applicable Voltage and Current Distortion Limits found in IEEE Standard 519-2014 *IEEE Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems* or any subsequent standards as they may be updated from time to time. The System Smart Inverters will be set for abnormal voltage and ride through operating performance Category III as defined in IEEE 1547-2018 using the default settings.

Voltage fluctuation at startup and during operation must be limited to less than 5% as measured at the POI.

Low Voltage Ride Through

The Project must be capable of riding through faults on adjacent section of the power system without tripping due to low voltage. It has been determined through study that the Project must

be capable of remaining interconnected for any single-phase voltage as low as 0.7 PU for 30 cycles, and for all three-phase voltages as low as 0.8 PU for 30 cycles.

Frequency Response Requirements

The Project must be capable of providing Primary Frequency Response for both positive and negative frequency deviations from 60Hz (+/- 0.036 Hz) with a droop of up to 5% for Bulk Electric System disturbances. Provided the Project meets the above Primary Frequency Response requirements, IPC shall not curtail the Project when such curtailments are caused by a need to comply with applicable Frequency Response reliability standards.

Momentary Cessation Requirements

Momentary cessation should not be used within the voltage and frequency ride-through curves specified in PRC-024. Use of momentary cessation is not considered “ride through” within the “No Trip” zone curves of PRC-024. The use of momentary cessation should be eliminated to the extent possible consistent with NERC’s *Reliability Guideline for BPS-Connected Inverter-Based Resource Performance*.

Seller will be able to modify power plant facilities on the Seller side of the POCO only if 1) there is no impact on the operation of the transmission or distribution system, 2) the generation facilities are electrically isolated from the system via the fused disconnect switch, and 3) a terminal clearance is issued by IPC’s Load Serving Operator.

4.4 Reactive Power

The System Smart Inverters will be set for normal operating performance Category B as defined in IEEE 1547-2018, with the default reactive power control mode set for the voltage-reactive power mode and the parameters listed in Table 3.

Table 3

Voltage-Reactive Power Settings for Smart Inverters

Voltage-Reactive Power Parameters	Default Settings
V1	0.92 per unit of nominal voltage
Q1	44% of nameplate apparent power rating, injecting
V2	0.98 per unit of nominal voltage
Q2	0
V3	1.03 per unit of nominal voltage
Q3	0
V4	1.06 per unit of nominal voltage
Q4	44% of nameplate apparent power rating, absorption

The Project must be controlled to operate as a VAr neutral system with a ± 62 kVAr operating band. IPC will determine the reactive power required to be supplied by IPC to the Project based on information provided by Seller. IPC will specify the equipment required on IPC’s system to

meet the Project's reactive power requirements. These specifications will include, but not be limited to, equipment specifications, equipment location, IPC-provided equipment, Seller provided equipment, and all costs associated with the equipment, design, and installation of IPC-provided equipment. The equipment specifications and requirements will become an integral part of the Schedule 72 GIA.

The required inverter settings are available for download at the following location:

https://docs.idahopower.com/pdfs/BusinessToBusiness/CustomerGeneration/Idaho_Power_Inverter_Settings.csv

Appendix A

IPC Survey Requirements

- Is the Grantor's Deed Instrument No. noted in the Exhibit 'A' Legal Description or Exhibit 'B' Survey Map?
- Are the Section, Township, Range, and County information clearly stated on the Exhibits?
- Is the Basis of Bearings between found monuments called out and noted on the Exhibits?
- Are the Point of Commencement, Point of Beginning and or Point of Terminus shown on the Exhibits?
- Do all lines have a bearing and distance associated with them on the Exhibits?
- All lines need bounding calls to Grantor's ownership lines, Rights-of-Way, etc. in Exhibit A.
- Are the Subdivision names, lot & block, and streets labeled on the Exhibit B?
- Are any existing Utility Easements adjoining this Easement called out and shown on the Exhibits?
- Is the map scale noted and is there a North arrow shown on the Exhibit B?
- On a strip easement is the width given and does it call to form a closed figure in the Exhibit A?
- Does the Parcel description close?
- Are the reference surveys of record or CP&Fs used to prepare the easement called out and shown on the Exhibits?
- A Professional Land Surveyor or Engineer in responsible charge must stamp, sign and date the exhibits for submission.
- A copy of the current Deed of Record for the Grantor is needed for submission.

Appendix B

IPC Easement Requirements for Sellers

Idaho Power Company**Corporate Real Estate Department****Seller Requirements for Interconnection Facility/Substation Land for Development of Transmission Provider's Interconnection Facilities****Easement**

An easement may be secured if IPC will not have a purpose or need to use the property beyond the current development. An example would be a solar farm development that requires a new IPC interconnect substation that will not be used by IPC in the future if the solar farm operation is discontinued.

Corporate Real Estate process will require the following steps and/or documents.

Process time frame: 6 mos. to 1 year depending on project specifics.

1. **Right of Entry Agreement.** A Right-of-Entry Agreement will allow IPC to conduct necessary due diligence studies and review of the property and substation lands to determine feasibility for development. This document is required to be signed by the underlying property owner prior to IPC entry onto the owner's lands for testing, surveying, etc. and will allow the preliminary stages of project development to commence pending completion of the transfer of substation lands to IPC.
2. **Purchase and Sale Agreement – Substation Easement – Access Easement – Power Line Easements.** IPC requires the following easements from the underlying property owner for our interconnection facilities: (1) substation easement, (2) access easement (for access to the substation) and (3) transmission and distribution line easements. Corporate Real Estate will enter into a purchase and sale agreement with the underlying property owner to provide for the grant of the easements to IPC.
3. **Title Commitment.** IPC requires that Seller ensure the substation, access, and power line easement lands are free from any encumbrances to title. To meet this requirement, a Title Commitment with A.L.T.A. extended coverage owner's policy in IPC's name is required. All exceptions to title insurance need to be provided with the Title Commitment for IPC review. Upon receipt, Corporate Real Estate will review all exceptions and will advise of any necessary follow-up actions. Importantly, IPC requires a form of ownership that is free and clear from all encumbrances.
4. **Survey.** An A.L.T.A. survey for the substation, access and power line easements is required. The A.L.T.A. survey will be reviewed by IPC's surveyor who will advise of any necessary revisions.
5. **Legal Descriptions.** Written legal descriptions, stamped and signed by a surveyor licensed in the state of Idaho, are required for the substation easement, access easement,

and distribution/transmission line easements. The written legal descriptions will be reviewed by IPC's surveyor who will advise of any necessary revisions.

6. **Phase I Study**. Seller shall provide IPC with a Phase I environmental site assessment study for the substation, access and power line easement lands, which (1) is prepared by an independent environmental site assessment company, in IPC's name, (2) recognizes that IPC holds an interest in the easement areas and is a User of the Phase I report, and (3) provides appropriate environmental warranties to IPC for the lands over which the substation, access and power line easements will be located. The Phase I study will be reviewed by IPC, and IPC will advise if a Phase II environmental site assessment or other actions are required based on the results of the Phase I study.
7. **Public Lands Permits/Authorizations (if needed)**. Should any public lands, rights-of-way, etc. be affected by IPC's use of or access to the interconnection facilities, Seller shall be responsible to secure any necessary agency authorizations or permits in IPC's name, at Seller's sole cost and expense. Seller shall be responsible to ensure all conditions of approval are satisfied, fees are paid, etc. for the agency permits.
8. **Land Use Permits/Authorizations**. Seller shall be responsible to secure any necessary land use entitlements or authorizations from the local jurisdiction, local agencies, state of Idaho, or Federal or other agencies for IPC's construction, operation and maintenance of the interconnection facilities (example: Conditional Use Permit from city or county). Any such authorizations shall be secured in IPC's name and for the benefit of IPC. IPC will require that Seller satisfy all conditions of approval and requirements for any such entitlement or authorization.
9. **Costs**. Any costs pertaining to the above items shall be at Seller's sole cost and expense.
10. **Miscellaneous Documents**. Other Miscellaneous Documents as necessary for the specific project, and which may include Memorandums of Understanding or Agreement, etc.

Appendix C

Alternative Telecommunications Service

**Idaho Power Guidelines for Alternative Telecom Service
Strategies for Existing and New Cogeneration and Small Power Production
Generator Interconnection Agreements**

This document, supporting the Schedule 72 GIA, serves as a guideline for the review by IPC of strategies for proposed telecom circuit services, as alternatives to established common carrier solutions, to meet the requirements of POTS for existing and new Generator Interconnection Agreements (GIA). The goal is for alternative circuit solution providers to demonstrate comprehensive aspects of solutions to meet the contractual requirements of GIA with the Cogeneration and Small Power Production (CSPP) project owner, without involving engineering analysis by IPC, nor implying IPC responsibility for ensuring acceptable operation of the alternative circuit solutions.

As background, CenturyLink is an incumbent local exchange carrier (ILEC) with established isolated circuit entrance facilities into the Boise Bench Station, which houses the IPC Ethernet and DS1 termination equipment required for co-generation circuits. Alternative services may require establishment of additional approved competitive local exchange carrier (CLEC) with isolated entrance facilities into the Boise Bench Station, or creation of a composite service with transition to CenturyLink, for terminus for all Ethernet and DS1 circuits. Additionally, CSPP site telecom services are typically provided by CenturyLink or other common carriers who serve the geographic area. CSPP project owners, or their third-party contractors, may elect to design, install, operate, and maintain a composite solution by interposing intermediate telecom services with handoffs to those common carriers. The overall composite system design, circuit performance, reliability, and operational availability should remain in alignment with common carrier telecom standards and GIA requirements.

In the case where an alternative or composite third-party solution is desired, a comprehensive proposal package should be supplied to IPC for strategy review. To facilitate a timely review of the proposal, label each submitted article with the site location and corresponding topic numbers listed below. Incomplete packages will not be reviewed. By conducting this review and providing any feedback, IPC is in no way providing engineering design services and shall incur no responsibility or liability for the proper implementation, acceptable operation, or compliance with the GIA, which is the sole responsibility of the CSPP project owners.

1. Documentation which demonstrates composite POTS solution meeting Bellcore/Telcordia TR_NWT_000335.
2. Implementation details and analysis of composite equipment isolation solution to withstand site ground potential rise due to electrical faults, per IEEE-367-1996.
3. Implementation details and analysis of composite solution power supply equipment to meet required duration of circuit operation in the event of loss of local AC power.

4. Third-party composite telecom circuit test plan. The third-party test plan should test to, and provide test results of, IPC circuit demarcations in a manner to maximize the successful subsequent acceptance tests by IPC for the POTS circuit. Successful serial data transfer (BERT testing using a 2047 test pattern) of tester-supplied modem connected at the demark, in a looped back configuration at 4800bps using V.32bis modulation, requiring 15 consecutive minutes of error free operation. Test performed twice a day on two successive days.
5. Proposed composite circuit outage response plan and contact list for all parties involved in providing telecom circuits to the site (IPC Regional Technicians, CenturyLink or other CLEC with entrance facilities at Boise Bench Station, CenturyLink or other CLEC with telecom facilities at third-party circuit handoff, third party circuit provider, co-generation project owner).

Note: IPC technicians can only be dispatched by the IPC dispatch center once the telecom circuit owner has isolated any circuit issues to IPC owned equipment. An acceptable outage response plan includes the burden of troubleshooting co-generation circuit failures to the proper side of the co-generation /IPC demark falls on the co-generator who provides the circuits, prior to involving IPC personnel.

Revision History

Date	Author	Revisions
7/18/2024	Laura Nelson	Interconnection Facilities Study Report version 1.0 issued.
9/9/2024	Laura Nelson	Interconnection Facilities Study Report updated with new [REDACTED] equipment configuration and modification from SGIP to PURPA project following Planning review and acknowledgment that the results of the study would be the same. Version 2.0.