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WASHINGTON UTC UTILITIES AND TRANSPORTATION COMMISSION

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I-937 Technical Working Group
Analytic Guidance: Chelan PUD & Grant PUD qualified incremental hydropower efficiency improvements

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Mr. Janney and Mr. Culbertson:

On May 25, 2011, Chelan and Grant county public utility districts submitted a joint letter to Commerce requesting comment regarding compliance with RCW 19.285 and qualified incremental hydropower efficiency improvements. Earlier this year, Commerce, Washington Utilities and Transportation Commission staff and State Auditor staff convened the interagency I-937 Technical Working Group, comprised of staff representing Commerce and the UTC. On June 3, 2011, members of the TWG met to review your request.

Background

Your letter states, "In order to provide certainty and to ensure that customer dollars spent effectively, we are requesting that Commerce confirm that the listed improvements qualify under the statute and regulations."

Relevant definitions per RCW 19.285.030

(10) "Eligible Renewable Resource" means:

(b) Incremental electricity produced as a result of efficiency improvements completed after March 31, 1999, to hydroelectric generation projects owned by a qualifying utility and located in the Pacific Northwest or to hydroelectric generation in irrigation pipes and canals located in the Pacific Northwest, where the additional generation in either case does not result in new water diversions or impoundments.

Relevant definitions per WAC 194.37.040

(13) "Eligible renewable resource" means:

(b) Incremental electricity produced as a result of efficiency improvements completed after March 31, 1999, to a hydroelectric generation project owned by one or more qualifying utilities (see definition of qualifying utility in chapter 19.285 RCW) and located in the Pacific Northwest or to hydroelectric generation in irrigation pipes and canals located in the Pacific Northwest,

where the additional electricity generated in either case is not a result of new water diversions or impoundments.

(15) "Incremental hydropower" means the incremental amount of kilowatt-hours of electricity generated from a base or constant amount of water.

(21) "Qualified incremental hydropower efficiency improvements" means the installation or modification of equipment and structures, or operating protocols that increase the amount of electricity generated from the same amount of water. These may include rewinding of existing generators, replacing turbines with more efficient units and changing control systems to optimize electricity generation, and improvements to hydraulic conveyance systems that decrease head loss. They do not include additions to capacity by increasing pondage or elevation head, or diverting additional water into the project.

194-37-130 Documentation of Incremental Hydropower

(1) Utilities may count toward their annual renewable resource targets incremental power acquired from qualified incremental hydropower efficiency improvements made at the following facilities since 1999:
   (a) Hydropower facilities in the Pacific Northwest owned by a qualifying utility where the new generation does not result in new water diversions or impoundments.
   (b) Hydroelectric generation facilities in irrigation pipes and canals located in the Pacific Northwest, where the additional generation does not result in new water diversions or impoundments.

(2) The utility shall calculate renewable resource power from incremental hydropower as the increase in annual megawatt-hours of generation attributable to the qualified incremental hydropower efficiency improvements under average water generation.

(3) The increase in annual megawatt-hours of generation attributable to the qualified incremental hydropower efficiency improvements shall be documented by engineering studies or with before and after generation data. The documentation shall clearly explain:
   (a) Where the facility is located;
   (b) When the improvements were made;
   (c) How the amount of generation in "average water generation" was calculated;
   (d) What other factors may have caused an increase in electricity production and how the amount "attributable to the qualified improvements" was extracted from the total increase;
   (e) How and why the "qualified improvements" increased hydropower production; and
   (f) How the utility came to acquire the incremental output associated with the qualified improvements.

TWG Analysis and Response

The TWG offers analytic guidance to provide more clarity on issues related to I-937; however, the guidance does not represent pre-qualification under I-937, nor does it represent a legal opinion. This guidance contains staff opinions based solely on facts presented in your letter and assumes those facts to be true and correct. Agency staff reserve the right to change their opinion should additional information come to their attention. These views are solely those of the agency staff and cannot be considered to be

binding in any formal proceeding on this matter. It is incumbent on the stakeholder using this process to make their case to the State Auditor or UTC, as appropriate.

Based on analysis of information you provided, the TWG found:

Chelan County PUD (Appendix A)

Replacement and rehabilitation of turbines, generators and transformers: These modifications are qualified as incremental hydropower efficiency improvements, but consider the following:

- Completion date is the point at which you can begin counting energy savings generated from the qualified improvements.
- Referring to the documentation requirements from 194-37-130 (3)(d) above, you need to be ready to document attribution of the qualified improvements. Remember that you must subtract other factors—not directly related to the qualified improvements, such as water year conditions —that may have caused an increase in electricity production.

Juvenile fish bypass system: This is a qualified incremental hydropower efficiency improvement based on the following:

- As described, the fish bypass is an efficiency improvement that does not result in new water diversions or impoundments. The amount of water used by the facility does not change. The fraction of existing water that is used for fish migration is reduced and made available for power generation.
- Re-allocating water resources from one use within the project to another is not a new diversion. We assume the "project" is defined as the historic footprint of the dam site across the river and therefore diversion does not occur inside that project envelope. The rerouting of water within the project envelope is an operational change not a new diversion of water.

Trash rack installation: This is a qualified incremental hydropower efficiency improvement; however, consider the following:

- Refer to WAC 194.37.040 (21). You need to document why the trash rack structural improvement minimizes head loss and make a clear case for the efficiency improvement. It is not clear to the TWG that increasing the frequency of trash rack cleaning is an efficiency improvement. A solid case would need to be made that this goes beyond good standard practice. Engineering studies and reports would be useful in making your case for the before and after structural improvements resulting in energy efficiency.

Grant County PUD (Appendix B)

Replacement and rehabilitation of turbines, generators and transformers: Same as Chelan County above. These modifications are qualified as incremental hydropower efficiency improvements, but consider the following:

- Completion date is the point at which you can begin counting energy savings generated from the qualified improvements.
- Referring to the documentation requirements from 194-37-130 (3)(d) above, you need to be ready to document attribution of the qualified improvements. Remember that you must subtract

other factors—not directly related to the qualified improvements, such as water year conditions —that may have caused an increase in electricity production.

Juvenile fish bypass system: Same as Chelan County above. This is a qualified incremental hydropower efficiency improvement based on the following:

- As described, the fish bypass is an efficiency improvement that does not result in new water diversions or impoundments. The amount of water used by the facility does not change. The fraction of existing water that is used for fish migration is reduced and made available for power generation.
- Re-allocating water resources from one use within the project to another is not a new diversion. We assume the "project" is defined as the historic footprint of the dam site across the river and therefore diversion does not occur inside that project envelope. The rerouting of water within the project envelope is an operational change not a new diversion of water.

If you have questions, please contact Meg O'Leary at meg.oleary@commerce.wa.gov or (360) 725-3121.

Thank you,

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