DESCHUTES RIVER ALLIANCE

October 28, 2015

Dr. Michael J. Sale
Low Impact Hydropower Institute
PO Box 194
Harrington Park, NJ 07640
Re: LIHI Certificate # 25

Dear Dr. Sale and Members of the Low Impact Hydropower Institute Appeals Panel:

The Deschutes River Alliance (DRA) submits this Appeal of LIHI's recent Preliminary Certification Decision for the Pelton Round Butte Hydroelectric Project ("Project"). The DRA strongly supports LIHI's mission and principles, and has greatly appreciated the opportunity to participate in the Project's certification process.

Unfortunately, recent Project operations have resulted in material and well-documented negative impacts to the aquatic environment of the lower Deschutes River, making the Project anything but "low impact." As written, LIHI's proposed conditions will allow Project Operators to continue discharging water of inappropriate quality below the Project, resulting in continued harmful effects on many forms of life in the lower Deschutes River. It would be inconsistent with LIHI principles, and indeed with LIHI's name itself, to recertify the Project under these proposed conditions. If LIHI is to recertify the Project, DRA believes it should strengthen certification conditions to ensure that the lower Deschutes—a river treasured by many and one of Oregon's premier recreational rivers—receives flows from the Project that will allow it to recover from its current Project-induced degraded condition.

## I. Introduction

The Project made a major change to operations on December 31, 2009, when the "Selective Water Withdrawal" (SWW) tower was put into operation to draw surface water from Lake Billy Chinook. The stated purposes of the tower were to eliminate the thermal presence of the dams, and to facilitate reintroduction of anadromous fish upstream from the Project by creating surface currents to guide juvenile migratory fish through the reservoir and into a fish collection facility. From there the fish are trucked around the Project's three dams and released into the lower Deschutes River to continue their journey to the ocean. As discussed below, neither of these objectives is being met.

In a short period of time, the water discharged from the Project went from water drawn exclusively from depth (high quality, low temperature) to a blend of reservoir surface water (low quality, high temperature) with water from depth. During much of the year, water discharged from the Project consists exclusively of reservoir surface water.

As a result of these changes in operations, the Project can no longer be considered low impact. On the contrary, SWW operations have resulted in several well-documented negative impacts to the entire aquatic ecosystem of the lower Deschutes River downstream from the Project. These impacts include, but are not limited to:

- **An increase in lower Deschutes River water temperature during spring and summer months.** This Project-induced warming is increasing water temperature in the lower Deschutes River, a reach of river already listed in 1998 as being impaired for high temperature under §303(d) of the Clean Water Act. Excessively high water temperatures were contributing factors in two fish die-offs in the summer of 2015. During those fish die-offs, Project Operators insisted on adherence to a temperature management model that further warmed the lower Deschutes River in the face of every known principle of cold water fish species management, to say nothing of common sense. This added additional temperature stress to already severely challenged fish, both resident and migratory.
- **Degradation of water quality in the lower Deschutes River below the dam complex.** Water at depth in Lake Billy Chinook is of near neutral pH (7.0), while the pH of surface waters has been measured near 10.0 on numerous occasions. The lower Deschutes River was listed in 1998 under §303(d) of the Clean Water Act for violation of pH standards, and current Project operations serve only to exacerbate this critical problem.
- **A nuisance algae bloom and proliferation that is negatively affecting the biology of the lower Deschutes River.** During summer 2015, the nuisance algae in the lower Deschutes was so thick that it clogged water intakes for domestic and agricultural water systems. This was never observed under pre-SWW operations, and is an important measure of the severity of the problem. The Environmental Impact Statement (EIS) for the 2005 Federal Energy Regulatory Commission (FERC) license notes that nutrient sequestration was taking place in the reservoirs prior to implementation of surface water withdrawal. The EIS further notes that declines in reservoir nutrient loads would occur with surface water withdrawal. The only place for those nutrients to go is downstream. Yet the impact of those nutrients on nuisance periphyton growth in the lower Deschutes River was not addressed in the EIS, and Project Operators have failed to adjust operations to alleviate these serious consequences. Project managers are clearly empowered to respond to such problems, as the current license makes frequent reference to "adaptive management."
- **An alteration in timing of aquatic insect hatches.** The emergence of numerous aquatic insect species is occurring three to six weeks earlier than before SWW operations were implemented. This early emergence is a direct result of the warmer surface water released during the winter and spring months. It is well documented that earlier emergence typically means smaller adults, and smaller adult females produce fewer eggs. Additionally, the weather conditions may not be as favorable for adult survival when they emerge four to six weeks earlier (as has been observed with stonefly hatches) in the spring (e.g. early May instead of mid-June).
- **Declines in aquatic insects and an impact to insectivorous organisms.** Since SWW operations began, guides and long-time anglers on the lower Deschutes River have noted disturbing declines from historical levels in most of the river's major insect hatches, and a nearly total elimination of an entire species – *Antocha* crane flies. For the last three years, carefully selected fishing guides, who have

undergone aquatic insect hatch observation training, have documented adult insect numbers by filling out an online data form after each guide trip. The results of these surveys have been published by the DRA (available at DRA's website), and confirm the widespread observations of low numbers of adult aquatic insects. These changes point to an overall impact to both the aquatic and terrestrial fauna in and around the lower Deschutes River, including notable declines in swallows, nighthawks, songbirds, and bats—all of which rely on aquatic insects as a major food source.

- **Impacts to the local economy of north central Oregon.** As the fishing experience in the lower Deschutes River has been degraded, commercial demand at local businesses frequented by anglers has declined. The community of Maupin, Oregon, situated at roughly the midway point on the lower Deschutes River and whose local economy depends largely on river recreation, has expressed deep concerns about Project-related degraded river conditions and thus a diminished experience for river users. The Maupin community believes that this diminished river experience has translated into a decline in visitor traffic, with angling businesses reporting revenue losses between 30% and 40% thus far in 2015. This has further translated to reported revenue losses from Maupin hotels, restaurants, and markets. Additional reports of lost revenue have come from angling businesses in the north central Oregon communities of Bend and The Dalles. This decline in river use was not occurring prior to SWW operations and the resulting degraded ecological conditions in the lower Deschutes River. DRA has received letters of support from the Mayor of Maupin on behalf of the Maupin City Council, the President of the Maupin Chamber of Commerce, and others in the Maupin business community and residential community at large, which will be provided upon request.

All of these negative impacts are avoidable. The § 401 Certificate for the Project identified several water quality requirements, laid out in the incorporated Water Quality Management and Monitoring Plan (WQMMP), that were designed to help alleviate any negative effects of SWW operations on the lower Deschutes River. These requirements were incorporated into the Operators' FERC license, as well as a Settlement Agreement with 22 signatories including state and federal agencies, tribes, and several Non-Governmental Organizations (NGOs). When SWW operations began, it quickly became clear that the Project would not be able to meet these agreed-upon water quality requirements. However, rather than adjust Project operations to meet the requirements in the WQMMP, Project Operators worked privately with the Oregon Department of Environmental Quality (ODEQ) to develop Interim Agreements that simply weakened the relevant requirements. These Interim Agreements were implemented without notice to the original Settlement Agreement signatories, and in violation of Oregon Administrative Rule 340-048-0050, which requires public notice and opportunity for comment for any modification to a § 401 Certificate. SWW operations pursuant to these Interim Agreements have substantially contributed to the negative impacts described above.

DRA believes that the serious, negative, and well-documented changes to the aquatic environment of the lower Deschutes River caused by Project operations

disqualify the Project from meeting LIHI's criteria for a "low impact" hydroelectric operation. In fact, actions taken by the dam operators since the original LIHI certification in 2007 have only served to increase negative impacts in the Project area and downstream in the lower Deschutes River. Unless these significant, negative ecological impacts caused by Project operation are adequately addressed through strengthened conditions, LIHI recertification is inappropriate.

## II. Project Operators Have Regularly Violated Requirements of the Project's § 401 Certificate Since SWW Operations Began.

LIHI certification question B.1 asks if the applicant's facility is "[i]n Compliance with all conditions issued pursuant to a Clean Water Act Section 401 water quality certification." In the present case, this means the Project must be in compliance with all requirements of the WQMMP, a consensus document that was incorporated into the Project's § 401 Certificate. However, a review of Portland General Electric (PGE's) Water Quality Reports to FERC since SWW operations began shows that the Project has regularly failed to meet the WQMMP's requirements related to Dissolved Oxygen, Temperature, and pH. Further, rather than adjust Project operations to come into compliance with these requirements, in each of the last four years Project Operators have worked privately with ODEQ to weaken the applicable requirements. Project operations pursuant to these interim agreements are therefore not in compliance with the WQMMP (and thus the § 401 Certificate), and are inconsistent with LIHI principles of low impact.

### Dissolved Oxygen

The Dissolved Oxygen Management Plan (DOMP) for the Project, contained within the WQMMP, clearly states that discharge at the Reregulating Dam tailrace must meet an 11.0 mg/L DO criteria during the entire year. The DOMP further provides that if, at some point after SWW operations begin, monitoring indicates that Intergravel Dissolved Oxygen (IGDO) concentrations exceed 8.0 mg/L at all times, then an alternate DO criterion of 9.0 mg/L (as an absolute minimum) would apply.[1]

Project Operators have regularly violated these clear requirements ever since SWW operations began. PGE's Water Quality Monitoring Reports from 2010-2014 show that, between June and November, DO concentrations at the Reregulating Dam tailrace were almost continuously below the 11.0 mg/L requirement. In 2014, ODEQ and PGE decided that IGDO concentrations did exceed 8.0 mg/L, and thus the lower 9.0 mg/L requirement was applied.[2] However, Project Operators could not satisfy even this weaker

[1] Efforts to weaken DO requirements should receive special scrutiny, because IGDO measurements downstream from the Project can impact fish spawning and incubation. As water temperature rises, DO decreases. The combination of increased temperature and lower DO can be detrimental to many fish species in the river below the Project.

[2] It is important to note that ODEQ never made any type of formal determination that post-SWW IGDO concentrations continuously exceeded 8.0 mg/L. Instead, as explained below, the agency's "determination" came in a secret 2014 Interim Agreement with PGE;

requirement, as concentrations fell below 9.0 mg/L in September 2014. These results clearly demonstrate that the Project has consistently failed to meet the WQMMP's DO requirements, in violation of its § 401 Certificate.

Since DRA's initial comments on Project recertification, we have become aware that ODEQ and PGE have entered into a series of Interim Agreements in an attempt to weaken the WQMMP's requirements for DO, as well as for temperature. These yearly agreements, which were negotiated in private without public notification or input, have seriously undermined the original objectives of the Settlement Agreement, and have allowed the Operators to avoid changing Project operations to comply with the protective standards in the WQMMP.

The DRA has made a public records request to the State of Oregon to see all documents related to the negotiation of those agreements, but are apprised that some of these documents are still being held by the Oregon Department of Justice for review. What is abundantly clear from the documents we *have* reviewed is that the changes made in the various Interim Agreements were not based on biological studies. When SWW operations began, it quickly became evident that the Project would not be able to meet the agreed-upon WQMMP requirements using its planned method of operations. However, as noted above, rather than adjust Project operations to meet the WQMMP's requirements, PGE and ODEQ worked behind closed doors to instead weaken those requirements. With regard to DO, the agreements have lowered the WQMMP's required criteria significantly: the 2015 agreement requires only that PGE achieve a 30 day mean minimum value of 8.0 mg/L from June 16 through October 14, and an absolute minimum of only 6.0 mg/L. These are far below the original WQMMP requirements of 11.0 mg/L.

Again, these changes are not based on any biological data—they were made only to allow PGE to avoid making the operational changes necessary to comply with the original requirements. These unlawful changes to the Project's § 401 Certificate are not consistent with LIHI's mission and certification criteria. Each time Project discharges fall below the WQMMP's designated DO criteria, the Project is violating the conditions of its § 401 Certificate, making it ineligible for LIHI recertification.

**Temperature**

As they did with Dissolved Oxygen, PGE and ODEQ have attempted—through the privately negotiated Interim Agreements—to significantly weaken the WQMMP's temperature requirements. Under the WQMMP's Temperature Management Plan (TMP), discharge temperature is to be closely monitored once combined inflows reach 8° C, and the Project may not warm the lower Deschutes River more than 0.25° F over the river's "Natural Thermal Potential" (NTP)[3] when surface waters exceed 10° C. Under the Interim Agreements, however, the temperature at which blending operations begin has increased to 13° C, and target discharge temperatures have been raised to NTP + 0.3° C.

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the monitoring data leading to that "determination," as well as the agreement itself, were never made available to the public or any of the other Project stakeholders.

[3] After Oregon's NTP water quality standard was invalidated by a federal court, Project Operators began referring to the temperature to be achieved as the "Without Project Temperature," or WPT.

In addition, the most recent Interim Agreements now allow the discharge temperature, during "cooling events," to be as high as 0.5° C above NTP for up to 3 days. Even with these significantly weakened requirements, PGE's monitoring data show that discharge temperatures have exceeded the maximum temperature allowed in every year since SWW operations began. Most dramatically, in 2014 discharge temperatures were higher than the calculated NTP + 0.5° C for the entire month of October, and much of November as well. These high discharge temperatures are clearly a violation of the Project's § 401 Certificate.

This attempt to weaken the TMP's requirements is particularly troubling, because the formula used to calculate permissible discharge temperatures was already seriously flawed. The formula uses average maximum (or *peak)* temperatures of the three tributaries entering Lake Billy Chinook (LBC) to calculate NTP, rather than 7-day average temperatures—a more scientifically defensible standard that at least attempts to account for the natural diurnal cooling seen in freely flowing rivers. As a result of this flawed formula, SWW operations under the original TMP were already warming the lower Deschutes River at the very times it needed to be cooled, and relying on flows predicted from an abnormal flow year. Now, Project operations pursuant to the Interim Agreements are causing substantial ecological harm, including fish deaths, and PGE has refused to acknowledge that increased Project discharge temperatures are responsible.

Emails obtained from DRA's public records request show, again, that this weakening of the temperature requirements was not based on any biological assessment. Instead, PGE simply would not, or could not, meet the TMP's requirements, and worked privately with ODEQ to ensure desired Project operations would not be interrupted. Even more frustrating is the fact that PGE seems to have no problem changing the terms of its § 401 Certificate when it is convenient for them—such as when it is unable to meet that document's original requirements. However, when a change in Project operations would benefit aquatic life—such as the release of colder water to avoid salmon deaths—PGE cites that same § 401 Certificate as evidence that its hands are tied, and that it has no choice but to continue discharging dangerously warm water. This despite the fact that the Project's FERC license (§ 405) calls for implementation of emergency measures when fish or wildlife are put at risk

LIHI recertification is inappropriate at this time without reliable safeguards to ensure that temperatures in the lower Deschutes are not harmful to aquatic life. In Part IV, below, this Appeal further addresses the temperature issue and delineates a Condition that should be incorporated in any recertification of the Project.

**pH**

The WQMMP's pH Management Plan (PHMP) states that water discharge from the Project is "anticipated" to be lower pH than the weighted average of inflow pH to Lake Billy Chinook. When pH at the Reregulating Dam is found to exceed that weighted average, the PHMP makes clear that Project Operators are to "immediately contact ODEQ and WCB to develop an approach to reduce pH…."

PGE's Water Quality Monitoring Reports show that, since SWW operations commenced, pH at the Reregulating Dam has frequently been higher than the weighted average of tributary inflows during the summer months. (*See, e.g.,* PGE, Pelton Round

Butte Project 2014 Water Quality Monitoring Report, at Appx. 1–9). Further, on several occasions Project discharges have exceeded the state and tribal standard for pH of 8.5—notable because the lower Deschutes is already listed for pH on Oregon's 303(d) list of impaired waters. When DRA pointed out these exceedances in its initial comments, PGE claimed in response that ODEQ was contacted and made "aware" of every exceedance. However, this is only part of the PHMP requirement. Project Operators must not only report these violations, but must "develop an approach" to reducing pH. There is no evidence that this is happening. On the contrary, Lori Campbell and Greg Concannon (both representatives of PGE), each stated at the 2014 Annual Fisheries Workshop Meeting (hosted by PGE) that they cannot currently meet the pH requirement and also be in compliance with requirements for DO, temperature, and surface water withdrawal. This failure to develop an adequate approach for managing pH is a violation of the WQMMP, and should not be considered by LIHI to be low impact.

## III. DEQ'S Letter of Approval Should Not be Given any Deference in the LIHI Decision-making Process.

The LIHI certification process relies heavily on "formal recommendations of expert government agencies whose mandates are to protect the resources the criteria are designed to evaluate."[4] As part of the LIHI certification questionnaire, an applicant must provide a letter from the appropriate agency to document compliance with many of LIHI's criteria, including relevant water quality requirements. In the present case, Project Operators provided a letter of support from ODEQ (Sep. 18, 2014) to demonstrate compliance with all relevant water quality conditions of the § 401 Certificate. The letter stated that "PGE has been monitoring water quality conditions…and is continuing to learn how to adjust operations to better meet water quality standards," but "is compliant with state water quality requirements."

We believe it would be inappropriate for LIHI to rely on ODEQ's letter of support in this case. As discussed above, ODEQ has entered into private agreements with PGE over the last four years to change the applicable water quality requirements for the Project. These agreements have not been entered into because of any new scientific information about water quality, or in an attempt to "protect the resources the criteria are designed to evaluate." Instead, ODEQ has agreed to weaken water quality requirements only when informed by PGE that the Project could not meet the original requirements in the WQMMP. Further, these changes to the WQMMP (and thus the § 401 Certificate) were made in violation of the Oregon Administrative Rules, out of sight of the public and other parties to the original Settlement Agreement, including the Oregon Department of Fish and Wildlife (ODFW)—the agency whose mission statement makes clear its role in protecting Oregon's fish and their habitats.

One startling example of this behavior occurred in August/September 2013. ODEQ and PGE had already signed, in May of that year, an Interim Agreement lowering

[4] Low Impact Hydropower Institute Certification Handbook (2014), at 13.

the year-round DO criteria to 9.0 mg/L.[5] However, in late August, Greg Concannon of PGE wrote in an email to ODEQ's Bonnie Lamb:

> [I]t…appears the Project is unable to meet the 9 mg/L standard with continuous full spill….Based on our experience from last year, this could continue for some time, well into the fall. This is obviously a major concern for PGE and WSPE [Warm Springs Power Enterprises] *given the substantial cost of having to forego generation* at the Reregulating Dam….Is there any opportunity to temporarily allow PGE and WSPE to utilize the current standard of 8 mg/L? (emphasis added)

This apparently was not a problem for ODEQ: Ms. Lamb soon responded that she was waiting to "hear[] back from our lawyer about what we need to do to reflect that we are changing the [DO] criterion that you are targeting (no longer 9.0 mg/L) from what is written in our Agreement." Before long, a PGE attorney had drafted a letter to amend the Interim Agreement to lower the applicable DO standard well below the (already weakened) requirement in the May agreement.[6] This document was signed by Bonnie Lamb and filed as an "addendum" to the 2013 Interim Agreement.

This exchange demonstrates the troubling nature of the relationship between PGE and ODEQ. When PGE has expressed concern about the "substantial cost" of complying with the WQMMP's requirements, ODEQ has simply worked privately with PGE to weaken those requirements, often taking suggestions or language directly from PGE when formulating the updated standards. So, while perhaps ODEQ's letter of support is not surprising, it is not entitled to any deference in determining whether the Project is currently meeting its obligations under the WQMMP. In each of the past four years, the agency has ignored the clear commands of the § 401 Certificate—a document to which all of the FERC license signatories agreed—and allowed PGE to dictate when water quality requirements should be weakened. Under these circumstances, ODEQ's letter of support cannot properly be considered a "formal recommendation," and DRA believes it would be improper for LIHI to rely upon it in the recertification process.

## IV. LIHI's Proposed Conditions for Recertification Should be Strengthened

As written, LIHI's proposed conditions for Project recertification are insufficient to address the harmful ecological impacts the Project is having on the lower Deschutes River. DRA submits the following proposed changes to Conditions 1 and 3, as well as an additional condition designed to ensure water discharge from the Project can fully

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[5] This agreement was made despite the fact that ODEQ had not made any determination that IGDO levels met the 8.0 mg/L standard necessary to lower the water column DO standard to 9.0 mg/L. As the May 2013 Interim Agreement itself states, "the SWW has not been operating long enough to determine whether DEQ's 11.0 mg/L or its 9.0 mg/L standard will apply below the Project during the spawning season…."

[6] The new agreement required PGE to meet only an 8 mg/L standard as a 30-day minimum, 6.5 mg/L as a 7-day minimum mean, and 6.0 mg/L as an absolute minimum.

support cold-water aquatic life. Together, these conditions will help alleviate the most damaging effects of Project operations on downstream aquatic resources.

**Condition 1**

LIHI's first proposed condition should require Project Operators to provide more information in their annual Compliance Statement. Beyond identifying "deviations from FERC operating requirements," the facility owners should be required to give notice of actions that, while perhaps facially in compliance with FERC requirements, cause harm to the biology of the river. These actions would include a failure to lower discharge temperatures to avoid fish kills, increases in nuisance algae, and changes in adult insect abundance, among other possibilities.

This notice requirement is important because, as discussed above, the NTP/WPT concept is severely flawed. In just six years, application of this formula has already caused increases in water temperature and other water quality changes in the lower river, resulting in, or contributing to, deleterious ecological impacts (including fish kills). Project Operators should no longer be able to hide behind this flawed formula. It is imperative that LIHI, regulatory agencies such as ODEQ, ODFW, and the National Oceanic and Atmospheric Administration, and other interested parties be notified when SWW operations under the defective NTP/WPT formula are resulting in biological harm.

Further, Project Operators should be required to identify any deviations from the *original* FERC operating requirements—not the secretly negotiated Interim Agreements. If this is not the case, PGE can continue calling on ODEQ to adjust the relevant requirements each time it realizes it will be unable to meet the FERC license's original standards. The original operating requirements were designed to protect the ecology of the lower Deschutes River, and there was no suggestion, even under the rubric of "adaptive management," that their purpose was to protect the revenue of an investor-owned utility. Project Operators agreed to these original requirements in order to obtain FERC licensing, and 22 other signatories, including state agencies and NGOs, agreed they were appropriate. The Operators should be required to give notice to the public any time Project operations deviate from those agreed-upon requirements.

**Condition 3**

LIHI's third proposed condition should require that the findings from PGE's Nutrient and Algae Study be made available to the public on January 1, 2018. As currently written, the condition is essentially unenforceable: the language stating that the findings are "expected in 2018" gives PGE much more time than is warranted, and arguably never requires release of the report. The study is a 2-year study, which began in January 2015; there is no reason that the results should not be compiled and made available by January 1, 2018. This important information should be provided to stakeholders and the public on that date. In addition, at the end of the study's first year LIHI should require that PGE release interim data pertaining to basic water quality parameters (e.g. temperature, dissolved oxygen, pH, and nutrients) collected in Lake Billy Chinook and sites on the lower river.

PGE should also be required to immediately release the final report for the now-completed 2-year macroinvertebrate and algae study performed by R2 Resource Consultants. The purpose of this study is to compare post-SWW macroinvertebrate and algae samples with samples collected in 1999-2001, before the SWW tower was installed. It is important that this report be made available to all interested parties.

Finally, LIHI should replace the ambiguous term "stakeholders" in this condition with the phrase "members of the public interested in receiving the information." This will ensure that any interested person or party can gain access to these important studies, not just the original signatories to the Settlement Agreement.

**Proposed Temperature Condition**

High water temperature in the lower Deschutes River has been a long-term problem, as shown by ODEQ's §303(d) listing of the lower Deschutes River for temperature in 1998. Any activity that increases water temperature in the lower river only exacerbates the well-known temperature problem and the subsequent negative impacts on the aquatic environment.

There are two major components that have a direct effect on water temperature in the lower Deschutes River: 1) the temperature of water released from the PRB complex, and 2) the solar warming that occurs once the river exits the PRB complex and flows downstream through the river canyon. Temperature of the discharge water is the only factor over which there is control, and one aspect of Project operations—release of warmer water—has had the effect of increasing water temperature in the lower Deschutes River throughout the winter and spring, as well as during most of the temperature-critical summer period. In fact, water temperatures in 2015 reached lethal levels for salmonids, resulting in adult salmonid mortalities not only near the mouth of the Deschutes River, but also as far upstream as river mile 85 (within 15 miles of the PRB Complex).

Unfortunately, the Operators interpret the current temperature management plan to require the release of warmer water from the Project through the SWW tower into the lower river when temperatures in the three tributaries entering Lake Billy Chinook increase. This makes high water temperature impacts worse in the lower river at exactly the time when cooler water should be released from the Project to protect fish and aquatic life. Operations that result in fish kills, especially of ESA-listed species, are a violation of LIHI criteria 1.19, and should not be considered low-impact.

As a result, we request the following Condition be placed on the Operators for temperature management:

"Whenever the 7-day average maximum temperature exceeds $16^{o}$ C ($60.8^{o}$ F) anywhere from the Reregulation Dam tailrace to the mouth of Warm Springs River (RM 84), or $18^{o}$ C ($64.4^{o}$ F) from the mouth of Warm Springs River to the mouth of the Deschutes River, the Project will immediately increase bottom draw from the SWW to lower water temperature to the fullest extent possible, and continue bottom draw until water temperature drops below the stated temperature standards."

This proposed Condition is based on the temperature standards applicable to the lower Deschutes River, listed in Oregon Administrative Rules 340-041-0028. To have

any chance of meeting temperature standards, cold-water releases from the SWW must be increased when Oregon water temperature standards are exceeded.

## V. Conclusion

Since SWW operations began in 2009, PGE's actions have all been calculated to avoid any significant changes to mixing tower operations. This is unsurprising, given the enormous amount of financial resources PGE has invested—and public goodwill it has courted—in SWW and the flawed NTP/WPT formula. However, after six years, it is clear that the system as currently operated is failing. The mixing tower is not leading to the successful reintroduction of salmonid species above the dams; to date, survival rates of juvenile salmonids passing through Lake Billy Chinook to the SWW collection facility have been so low as to preclude any hope of successful reintroduction. While the mixing tower fails at this principal objective of establishing surface flows to attract migrating juvenile salmonids,[7] SWW operations are having serious, negative impacts on the ecology of the invaluable lower Deschutes River. The Project is raising temperatures and pH in the lower river, and lowering dissolved oxygen levels—three criteria for which the lower Deschutes River is already listed as impaired. Further, Project discharges are increasing the nutrient load in the lower river, leading to the explosive growth of previously rare nuisance diatoms. This, in turn, is affecting aquatic insect populations and the fish and other wildlife species that depend on them. These ecological changes are having an impact on communities throughout northern Central Oregon, whose continued economic vitality depends on a healthy lower Deschutes River and the visitors from all over the world who come to recreate on it.

These impacts are discouraging, but they need not continue. The Project's § 401 Certificate contains several requirements, developed and approved by various Project stakeholders and signatories to the license, that were designed to protect water quality in the lower Deschutes River. Unfortunately, time and again PGE has disregarded these clear obligations, and has instead worked out of public view to weaken the § 401 Certificate's requirements. These changes have not been based on any biological imperative; instead, the requirements have simply been weakened until they fit with the Operators' desires to continue SWW operations. The Operators' disregard for the WQMMP's requirements is inconsistent with LIHI's water quality certification criteria.

If LIHI chooses to recertify the Pelton Round Butte Project, it should do so only if conditions are included that will hold Project Operators accountable to their original obligations under the § 401 Certificate. Further, LIHI should ensure that the Operators agree to take action to release cold water when temperatures exceed state standards for the lower Deschutes River. These measures are a critical step in ensuring that the Project is operated in a manner that is truly low impact.

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[7] Mortality of certain discrete groups of juvenile salmonids passing through LBC in search of the SWW approach 90% in some cases. Survival of all groups is considerably less than the 75% long-term survival goal which PGE has identified as necessary for reintroduction to be successful. *See* Megan Hill et. al, STATUS OF FISH PASSAGE AND WATER QUALITY AT THE PELTON ROUND BUTTE PROJECT (PowerPoint presentation), Aug. 16, 2015.

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