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Via Electronic Mail: commentletters@waterboards.ca.gov

Ms. Jeanine Townsend
Clerk to the Board
State Water Resources Control Board
1001 I Street, 24th Floor
Sacramento, CA 95814

Subject: Comment Letter – Board Workshop: Recommendations for Developing Instream Flow Criteria for Priority Tributaries (Phase 4)

Dear Ms. Townsend:

The State Water Resources Control Board ("Board") is currently soliciting public input on methods to develop flow criteria for priority tributaries to the Bay-Delta, as part of Phase 4 of the Bay-Delta Plan Update. In February 2014, an independent panel of scientific experts selected by the Delta Science Program issued a report, "*Recommendations for Determining Regional Instream Flow Criteria for Priority Tributaries to the Sacramento-San Joaquin Delta*," in response to a request made by the Board in July 2013. After reviewing the report and attending a public workshop held on March 19, Pacific Gas and Electric Company (PG&E) welcomes the opportunity to provide the following comments for the Board's consideration.

Of primary concern to PG&E is the scope and schedule of the Phase 4 activities. Great care should be taken to ensure that Phase 4 activities do not duplicate or disrupt the Federal Energy Regulatory Commission (FERC) licensing processes in the upstream reaches of some tributaries, including those which have already concluded and are being implemented. The FERC licensing process comprehensively addresses all public trust resources with dependence on flows from FERC projects, and the Board is a key participant in these proceedings. In the Board's 2010 report, "*Instream Flow Studies for the Protection of Public Trust Resources: A Prioritized Schedule and Estimate of Costs*," a prioritization schedule was set forth that first focused on the tributaries where there are existing populations of anadromous fish. As noted by the Board's August 2010 report, "*Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem*," operational changes to the smaller upstream reservoirs would have "little or no direct effect upon Delta flows." Because of these concerns, PG&E recommends that Phase 4 focus on the areas below the rim dams with the potential to provide the most benefit for the current fish populations and appropriately utilize the Board's limited resources. Any Phase 4 flow criteria that are also intended to address public trust resource needs

within the Delta itself should likewise be limited to areas within the tributaries below the major rim dams.

With our extensive hydroelectric system located on numerous tributaries to the Sacramento and San Joaquin rivers, PG&E has a great interest in the Board's effort to develop flow criteria for these tributaries. PG&E also has extensive experience and knowledge about establishing flow regimes and other measures for the benefit of aquatic resources associated with our hydro facilities. Through FERC licensing and license compliance efforts, PG&E has a long history of working collaboratively with resource agencies and a wide variety of non-governmental organizations to develop and modify project flow regimes through the balancing of beneficial water uses, including, among others: protection of resident and anadromous fish populations, foothill yellow-legged frogs, and other aquatic resources; whitewater recreation; power generation; irrigation; and domestic use.

There are numerous examples demonstrating PG&E's development of successful flow regimes and other measures for the protection and enhancement of aquatic resources at our hydro facilities. PG&E is a key partner in an interagency Chinook salmon and steelhead restoration program at the Battle Creek Project that includes implementation of new flow regimes, removal of dams and other barriers to fish passage, and construction of fish ladders and fish screens. On Butte Creek, PG&E's DeSabla-Centerville Project has long played a critical role in providing flows and temperature control for the specific protection of spring-run Chinook salmon. And for more than a decade, PG&E projects in the North Fork Feather River and the Mokelumne River have been implementing detailed settlement agreements that include new flow regimes and adaptive management programs for the protection of resident trout and foothill yellow-legged frogs. This extensive experience informs the comments we provide below for developing flow criteria methodologies for the Bay-Delta tributaries.

The Board's July 2013 report, *Potential Methods to Develop Flow Criteria for Priority Tributaries to the Sacramento-San Joaquin Delta*, did an excellent job in setting the stage for the science panel's recommendations for determining flow criteria methodology. This report discusses two primary regional flow criteria development methods for consideration by the panel: 1) Instream Flow Incremental Methodology (IFIM); and 2) Ecological Limits of Hydrologic Alteration (ELOHA). The panel, in turn, has recommended a hybrid approach that would use the strengths of each method, and recommended the inclusion of seven basic steps in the overall approach.

PG&E supports the general concept of developing a hybrid approach, taking the best elements of each method, and combining them in a complementary way. We note that the details of which elements would be selected and how these would be integrated and applied are lacking at this point, although we recognize that this is the first step in the recommendation process, and that additional work will be required to

develop a well-defined and applicable method for the Board's purposes. We also support the use of the seven basic steps identified by the panel in their report. These steps would be important elements of whatever method is eventually selected and implemented by the Board. One step in particular that we would like to comment on is Step 6) Interaction between scientists and stakeholders. The importance of such interaction, leading to mutual understanding, consensus, and support for the process and outcomes, cannot be over-emphasized. PG&E as a stakeholder with vast experience in developing successful flow regimes looks forward to these interactions.

In contrast to a recommendation by the science panel, we recommend that the elements of IFIM be emphasized over those of ELOHA when developing a more defined hybrid approach, for a number of reasons. Although the panel recommends a hybrid approach that draws from the strengths of both IFIM and ELOHA, the panel further recommends that the approach "start with the ELOHA method and use site specific information where additional data are available." Instead, we recommend that the hybrid approach begin with site specific information available through the multitude of IFIM proceedings that have already been conducted, and then fill in the gaps with either collection of additional data using IFIM-related tools (e.g., Physical Habitat Simulation Model [PHABSIM] and Stream Network Temperature Model [SNTEMP]) or implementation of selected ELOHA components. A clear protocol of defaulting to IFIM results whenever possible would lead to a stronger set of flow criteria with a sound basis in actual conditions.

IFIM is a proven decision support framework using known science for resource decisions, and is an approach PG&E, resource agencies, and other stakeholders consistently use during FERC relicensing. In contrast, ELOHA is much more hypothetical, has not been used extensively to date, and relies on the assumption that it will be possible to develop a strong relationship between altered flow and ecological response. In its July 2013 report, the Board states that "empirical models that directly predict the relationship between flow alteration and ecological responses are not readily available." Additionally, given the complexity of conditions in tributaries to the Delta, it's unlikely that it would be possible to develop adequate field observations to define these relationships to the degree necessary for developing defensible flow criteria. Instead, as the Board states in its July 2013 report, there would be the need to rely on "expert judgment, statistical analysis, and modeling to continue the ELOHA process." This would translate to a lower degree of confidence in recommended flow criteria, based on an absence of defensible data. PG&E has used one component of ELOHA, the Index of Hydrologic Alteration (IHA) during several recent relicensing processes, and have found that the IHA statistics are complex and need to be interpreted with caution. In some cases, the method by which IHA calculates a given statistic is not readily apparent, and the method may have implications for the usefulness or interpretation of that statistic in the development of flow criteria. The use of data-driven resource specific studies that comprise the basis of an IFIM analysis is far more likely to produce usable,

defensible data than relying on the generalized statistical approach of the ELOHA process for the reasons stated above.

The Board specified four criteria that should be considered in the recommendation of methods to develop flow criteria: scientifically defensible, cost-effective, applicable to the bulk of each tributary's watershed, and able to be implemented in a timely fashion. A hybrid approach with emphasis on IFIM would meet these criteria. IFIM is scientifically defensible; it is science-based, has been used extensively and successfully in California, and is supported by resource agencies and other stakeholders in a variety of proceedings. Although IFIM is often described as being costly, the actual cost of using IFIM as part of the Board's current effort could be minimized through the use of IFIM results from efforts that already have been applied to many Sacramento and San Joaquin tributaries. For those streams where IFIM has not been previously applied, results from other streams in the watershed, or possibly nearby watersheds with very similar characteristics, could be incorporated into a more regional application of IFIM. Finally, through the use of results from existing IFIM proceedings, as supplemented by new data collection and implementation of ELOHA to fill the gaps, we believe that the effort could be implemented in a timely fashion relative to the Board's schedule.

We thank you for this opportunity to provide comments on the Board's effort to develop flow criteria for tributaries to the Sacramento-San Joaquin Delta, and we look forward to working with your staff as this effort progresses.

Very truly yours,

Alvin Thoma, Director
Hydro Licensing

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