



Department of Water Resources
Division of Environmental Services
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July 9, 2013

Mr. Will Stelle
Regional Administrator, Northwest and Southwest Region National Marine Fisheries
Service
7600 Sand Point Way, NE, Building 1
Seattle, Washington 981150-0070

RE: Habitat Expansion Agreement Annual Report for period beginning April 2012
through June 2013.

Dear Mr. Stelle:

The purpose of this letter is to provide an Annual Status Report (Annual Report) to the National Marine Fisheries Service (NMFS) on progress achieved in implementing habitat expansion actions contemplated under the *Amended Habitat Expansion Agreement for Central Valley Spring-Run Chinook Salmon and California Central Valley Steelhead* (Amended HEA), which has an effective date of May 9, 2011. This Annual Report is intended to fulfill the reporting obligation of the Licensees, Pacific Gas and Electric Company (PG&E) and the California Department of Water Resources (DWR), described in Section 6.2 of the Amended HEA. The reporting period covered by this Annual Report is April 2012, when the last Annual Report was submitted, through June 2013.

As a result of comments submitted to NMFS during the 60-day consultation period on the November 2010 Final Habitat Expansion Plan (HEP), the Licensees and NMFS convened a meeting to address concerns about the technical viability of the Lower Yuba River habitat expansion actions proposed in the Final HEP. Technical representatives of NMFS, PG&E, and DWR participated in the meeting, held October 11, 2012 at the NMFS office in Santa Rosa, California. During the meeting, the Licensees and NMFS discussed the proposed habitat expansion actions in regard to their ability to meet the



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following NMFS Approval Criteria (Amended HEA Section 4.2.3): (a) estimated to meet the Habitat Expansion Threshold; (b) assures necessary testing, operation, and maintenance; (c) supports establishing a geographically separate, self-sustaining population of spring-run; (d) supports segregating spring-run habitat from Central Valley fall-run Chinook salmon; and (f) expected to be implemented within a reasonable period of time. Discussion of the sixth approval criterion, (e) meets the requirements for eligible habitat expansion actions(s) pursuant to Section 3 of [the Amended HEA], was saved for another meeting to be held at a later date among management and legal representatives of NMFS, PG&E, and DWR.

While the October 2012 technical meeting did not resolve all areas of concern, it did provide a valuable opportunity for dialog about some key technical considerations regarding the proposed habitat expansion actions. One key area of concern raised by NMFS was the ability of the proposed habitat expansion actions to support segregating spring-run and fall-run Chinook salmon. As follow-up to the technical meeting, on November 25, 2012 the Licensees provided NMFS a "Brief on Segregation of Spring-Run and Fall-Run Chinook Salmon," (dated October 30, 2012; Attachment 1), further describing the Licensees' rationale for how the Lower Yuba River habitat expansion actions would support segregating the runs.

The Licensees have also continued to closely track the ongoing legal dispute over the February 29, 2012 Biological Opinion for the Army Corps of Engineers' operation and maintenance of Englebright and Daguerre Point dams and Englebright Reservoir (Corps BiOp) because of its relationship with the Lower Yuba River habitat expansion actions proposed in the Final HEP. Specifically of interest to the Licensees, in the context of the HEA, is the similarity of the actions proposed in the Final HEP and measures listed in Reasonable and Prudent Alternative 5 (RPA 5) of the Corps BiOp. In July 2012, DWR and PG&E each submitted letters to NMFS (DWR letter dated July 31, 2012; Attachment 2. PG&E letter dated July 12, 2012; Attachment 3) stating their positions on the relationship between the Final HEP and RPA 5 in the Corps BiOp. Subjects covered in these letters included the ability of the Corps to implement these actions in a timely manner and whether the release of the Corps BiOp would affect eligibility of the Final HEP actions. The Licensees are concerned that, until the legal disputes over the Corps BiOp are resolved, implementation of habitat expansion actions in the Final HEP will be stalled.

However, if NMFS were to approve the Final HEP, the Licensees believe that the Lower Yuba River habitat expansion actions could be implemented within two to four years and ESA-listed species would begin realizing the benefits of the actions shortly thereafter. NMFS could take this step before resolving other outstanding issues in the Corps BiOp litigation. The Licensees remain committed to implementing the Final HEP and achieving the goals of expanding spawning and rearing habitat to accommodate 2,000 to 3,000 Central Valley spring-run Chinook salmon as soon as possible. We

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believe that the Lower Yuba River habitat expansion actions proposed in the Final HEP would meet the goals of the Amended HEA most expeditiously.

We look forward to continuing to work with NMFS on implementation of the Final HEP and Amended HEA. If you have any questions regarding this Annual Report, please contact either of us.

Sincerely,



Dean F. Messer, Chief
Division of Environmental Services
California Department of Water Resources



David W. Moller, P.E.
Director, Power Generation
Pacific Gas and Electric Company

Attachments:

Attachment 1 - HEP Segregation Brief 103012
Attachment 2 - Letter - DWR to NMFS HEA HEP 073112
Attachment 3 - Letter - PGE to NMFS HEA HEP 071212

cc: see attached list

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Final Habitat Expansion Plan
Brief on Segregation of Spring-Run and Fall-Run Chinook Salmon

October 30, 2012

In determining whether to approve the Final Habitat Expansion Plan (HEP), NMFS will consider the extent to which the habitat expansion actions recommended in the Final HEP meet a series of criteria, including “(d) supports segregating Spring-Run habitat from Central Valley fall-run Chinook salmon”.

Some natural segregation seems to be occurring in the lower Yuba River, with spring-run Chinook salmon tending to occupy areas closer to Englebright Dam and fall-run fish concentrating in the Timbuctoo Bend area downstream. High velocity rapids in the Narrows Reach (i.e., upstream of Timbuctoo Bend) may be at least partially responsible for the apparent segregation. However, suitable spawning habitat is severely limited in both the Englebright Dam and Narrows reaches. The recommended spawning habitat expansion actions (i.e., at Sinoro Bar and Narrows Gateway) would support separation of spring-run and fall-run Chinook salmon by providing habitat conditions suitable for spring-run Chinook salmon spawning in the Englebright Dam and Narrows reaches, while not reducing access by fall-run fish to habitat they presently use.

To further support segregation of spring-run and fall-run Chinook salmon, the option of installing a seasonal segregation weir immediately downstream of the Narrows Pool has been included as one of the recommended actions in the Final HEP. The idea behind the weir is to ensure sufficient separation of the two runs as necessary, so that a viable population of spring-run Chinook salmon could develop using the expanded habitat at Sinoro Bar and Narrows Gateway. The weir would be used to provide near-exclusive access for spring-run Chinook salmon to the uppermost holding and spawning habitat on the lower Yuba River between Englebright Dam and the Narrows Pool. This reach contains the highest potential to create quality spring-run Chinook salmon holding and spawning habitat in the lower Yuba River based on the frequency of large, deep pools; geomorphic features that allow for the restoration/creation of spawning habitat (i.e., at Sinoro Bar and Narrows Gateway); and favorable summer water temperatures.

The segregation weir is not intended to create an absolute barrier within the river, or to confine all spring-run Chinook salmon to a limited portion of the river. The expectation is a continuum of Chinook salmon spawning above Daguerre Point Dam, with spring-run fish concentrating above the Narrows Pool and fall-run fish concentrating below that point (i.e., in the Timbuctoo Bend area). Installation of the weir would have minimal impact on the existing fall-run Chinook salmon population, as few Chinook salmon currently spawn above the Narrows Pool due to the lack of suitable spawning habitat. Potential issues associated with steelhead migration past the weir site would be addressed in the design, construction, and operation of the weir.

The use of weirs to separate species or races of salmon is a well-proven technique and is used or planned for use in other Sacramento River tributaries, including Battle Creek and Clear Creek,

and the Feather River, respectively. Although use of a weir would not independently expand available habitat, inclusion of a weir could considerably enhance the value of the spawning habitat expansion actions at Sinoro Bar and Narrows Gateway for spring-run Chinook salmon.

Specifically, the segregation weir is recommended as an optional management tool to be called for by the resource agencies (NMFS, USFWS, and DFG), at their discretion, and provided under the HEA to address at least three situations:

1. **To promote development of a self-sustaining population of spring-run Chinook salmon in the initial years following completion of the spawning habitat expansion actions.** The resource agencies may choose to enhance segregation after habitat expansion to ensure optimal conditions for developing the spring-run population.
2. **To address in-season conditions that suggest the need for additional segregation to protect the spring-run population.** In years when projected returns of fall-run fish are especially strong relative to the return of spring-run, the agencies may elect to use the weir to protect spring-run in the area of habitat expansion.
3. **To address conditions over time regarding segregation of the two runs.** With experience, the agencies may conclude that a weir is needed on a permanent basis to enhance separation of the two runs. Alternatively, as the spring-run population increases in response to the expanded habitat, the agencies may conclude that a weir is not necessary.

To assist the resource agencies in determining the need for installation and management of a seasonal segregation weir, the Licensees have recommended development and use of an explicit Adaptive Management Plan (AMP). The AMP could be used to determine both in-season and long-term strategies for installation and management of the weir. A concept for an AMP has been included in the Final HEP.

DEPARTMENT OF WATER RESOURCES

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JUL 31 2012

Mr. Rodney R. McInnis, Regional Administrator
National Marine Fisheries Service, Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

Habitat Expansion Agreement for Central Valley Spring-Run Chinook Salmon
and California Central Valley Steelhead

Dear Mr. McInnis:

The Department of Water Resources (DWR) and Pacific Gas and Electric Company (PG&E) are signatories, along with the National Marine Fisheries Service (NMFS), other agencies, and non-governmental organizations, to the Habitat Expansion Agreement (HEA). Per the terms of the HEA, DWR and PG&E submitted a Final Habitat Expansion Plan (HEP) to NMFS for approval in November 2010. The HEP proposed that PG&E and DWR undertake habitat expansion actions in the lower Yuba River downstream of Englebright Dam consistent with the goals of the HEA.

NMFS held three meetings on February 21, 24, and 28, 2012, during which DWR and PG&E staff provided an overview of the HEP actions and discussed options for moving forward. The first meeting initiated a 60-day consultation period required in the HEA for NMFS to take action on the HEP.

On February 29, 2012, NMFS issued a Biological Opinion (BiOp) for the Army Corps of Engineers' (Corps) operation and maintenance of Englebright and Daguerre Point dams on the Yuba River. Reasonable and Prudent Alternative 5 in the BiOp requires channel restoration actions on the lower Yuba River that are closely related to the actions that DWR and PG&E proposed earlier in the HEP.

DWR understands the Corps may not be able to implement all of the actions in the BiOp. The lower Yuba River habitat expansion actions identified in the Final HEP are "eligible" as defined in the HEA because they can be implemented soon, augment the actions in the BiOp, and predate the formulation of the BiOp. DWR believes the lower Yuba River HEP actions can be implemented within two to four years and can complement any actions the Corps will implement under the BiOp. DWR remains committed to implementing the HEP and achieving the goals of expanding spawning and rearing habitat to accommodate 2,000 to 3,000 Central Valley spring-run Chinook salmon and steelhead. The HEA favors actions that can benefit spring-run Chinook

Mr. Rodney R. McInnis

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salmon and steelhead as soon as possible. We believe the lower Yuba River HEP actions meet this objective and can quickly achieve the goals of the HEA, and therefore believe NMFS should accept the HEP.

Thank you for considering DWR's perspective regarding the eligibility of the habitat expansion actions identified in the Final HEP. If you have any questions or comments, please contact me at (916) 653-6055 or Dean Messer, Chief of DWR's Division of Environmental Services, at (916) 376-9700.

Sincerely,



Dale K. Hoffman-Floerke
Chief Deputy Director

cc: Mr. David Moller
Director, Power Generation
Pacific Gas and Electric Company
P. O. Box 770000 N11C
San Francisco, California 94177

Via Overnight UPS

July 12, 2012

Rodney R. McInnis, Regional Administrator
National Marine Fisheries Service, Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, CA 90802-4213

Re: PG&E's Comments and Request for Clarifications on NMFS' Biological Opinion addressing Army Corps of Engineers' operation and maintenance of Englebright and Daguerre Point Dams on the Yuba River dated February 29, 2012, PCTS Tracking 2012/00238

Dear Mr. McInnis:

This letter transmits Pacific Gas and Electric Company's (PG&E) comments on the Biological Opinion (BiOp) that the National Marine Fisheries Service (NMFS) issued on February 29, 2012, as referenced above, addressing the Army Corps of Engineers' (Corps) operation and maintenance of Englebright and Daguerre Point Dams on the Yuba River. On March 14 and May 29, 2012, NMFS hosted meetings with the Corps, Yuba County Water Agency (YCWA) and PG&E to discuss the BiOp. Following the meetings, NMFS invited clarifying comments and corrections. We appreciate the opportunity to provide comments, but also note that consultation with PG&E in advance of issuing the BiOp might have avoided errors we are now trying to correct.

PG&E understands that NMFS' goal, as expressed at the March 14 meeting, was to use the BiOp as a process to create a basin-wide regulatory program to aid specific listed species, including spring-run Chinook salmon and Central Valley steelhead. PG&E notes that it has been involved in collaborative processes on the Yuba River and elsewhere for many years to aid these listed species – efforts that can complement and fill gaps in required regulatory processes. Such collaborative processes have great potential to identify and lead to implementation of high value actions – those that will have the greatest effect and which can often be implemented relatively quickly compared to regulatory-required processes. However, given the many factual, technical and legal errors PG&E, the Corps and YCWA have identified, the BiOp appears to overreach and displace, rather than complement, several collaborative processes. Thus, instead of furthering solutions, it seems likely to be disruptive to them.

Because this BiOp is likely to be widely cited as an authoritative document, it is critical that it be accurate and include the strongest possible base analysis given currently available data, which in

turn will be used to craft the best possible solutions for listed species and other interests in the watershed. The BiOp is weakened by its numerous errors, including: (1) omitting reference to and synthesis of the best available scientific and commercial data; (2) incorrect factual assumptions; and (3) incorrect application of law, including impermissibly broadening the definition of the “proposed action,” and misapplying legal terms and concepts such as “interrelated and interdependent” and “action area.”

As the BiOp states: “If new information indicates an assumption is invalid, the Corps and NMFS may be required to reassess effects of the proposed action on these species and critical habitat, and reinitiation of consultation may be warranted” (p.53). Because of the many errors, reassessment is warranted.

PG&E notes that the Corps and YCWA, by letters dated July 3, 2012 and June 29, 2012, respectively, have each provided detailed critiques of the BiOp. PG&E supports those comments and urges NMFS to work with the Corps, YCWA and PG&E to adopt the recommendations made in those letters to correct the BiOp. In addition, PG&E recommends corrections and clarifications to the BiOp in two areas that directly affect PG&E’s interests as described below. This will help to refocus the BiOp back to its proper regulatory scope, which will likewise encourage, rather than interfere with, concurrent collaborative efforts and regulatory proceedings, such as on-going federal relicensing of three existing hydroelectric projects located on the Yuba River and implementation of the Habitat Expansion Plan, related to federal relicensing of four existing hydroelectric projects on the Feather River.

PG&E’s first area of interest relates to PG&E’s two hydroelectric projects identified in the BiOp: Narrows I, just downstream of Englebright Dam, and Drum-Spaulding, more than 40 miles upstream of Englebright Dam on the South Yuba River. The BiOp contains numerous factual, technical and legal errors regarding these projects, including misstating location and ownership of facilities and dates of relicensing proceedings at FERC; ignoring the fact that the Yuba Accord (to which NMFS is a signatory), and not Drum-Spaulding, governs Narrows I’s effects on the lower Yuba; ignoring results of studies that show Drum-Spaulding does not adversely affect flows or water temperatures for fish habitat at Englebright (much less Daguerre); and misstating legal concepts including the claim that Drum-Spaulding is “interrelated and interdependent” with Narrows I, all leading to faulty conclusions such as that the Corps might have legal authority over the operation of Narrows I or Drum-Spaulding.

The BiOp is unclear as to what, if any, responsibility it would assign PG&E due to Drum-Spaulding and Narrows I. PG&E seeks clarification that there is none, consistent with actual facts, science and law.

Second, PG&E is one of the signatories to the Habitat Expansion Agreement (HEA),¹ under which PG&E and the California Department of Water Resources (DWR) submitted a Final

¹ The HEA is the Amended Habitat Expansion Agreement for Central Valley Spring-Run Chinook Salmon and California Central Valley Steelhead, executed between PG&E, NMFS, DWR, American Rivers and others.

Habitat Expansion Plan (HEP) to NMFS in November 2010 for approval. NMFS has not yet approved the plan. The Final HEP proposes that PG&E and DWR undertake specific channel restoration actions in the lower Yuba River (Lower Yuba Actions) downstream of Englebright Dam to expand spawning, rearing and adult holding habitat to accommodate a net increase of 2,000-3,000 Central Valley spring-run Chinook salmon, and to accommodate Central Valley steelhead as well.² Because the BiOp's Reasonable and Prudent Alternative (RPA) 5 adopts the same actions PG&E and DWR proposed to undertake in the Final HEP, PG&E has a strong interest in RPA 5.

NMFS' goal of achieving the actions under RPA 5 can and should be placed back under the HEA and removed from the BiOp. Significantly, the Corps has stated it has neither the authority nor funding to accomplish RPA 5. Furthermore, the scientific studies supporting the Final HEP and those done supporting the Corps' existing Gravel Augmentation Program (*see* RPA 4) show that RPA 5 is not properly part of the BiOp because the "proposed action" (operation and maintenance at Englebright and Daguerre Point dams) did not cause the effects that RPA 5 would mitigate (habitat degradation primarily due to gold mining). *See* Corps letter to NMFS July 3, 2012 at p.17, para. 4, and Attachment 3 to the Corps letter at p. 50, para 2).

If NMFS retains RPA 5 in the BiOp, the likely outcome is that these channel restoration and habitat expansion actions will never be implemented. At the May 29 meeting, the Corps indicated that under its processes, in a best case scenario it would be six years before the Corps could even begin design of RPA 5, and more likely a decade or more, all contingent on obtaining Congressional authority and appropriation. The process involves multiple steps and requirements for local sponsors, as well. In sharp contrast, PG&E, with DWR, is ready, willing and able to proceed with the Lower Yuba Actions under the HEA as soon as final approvals are granted, and once implementation is started, the work can be completed in a few years. Because NMFS has the final say under both the HEA and the BiOp, NMFS controls the solution of deleting RPA 5 - based on the science - and approving the Final HEP.³

Further, If NMFS decides that the Lower Yuba Actions are ineligible under the HEA because they are included in the BiOp,⁴ it raises the question of whether any action on the Yuba could be considered eligible under the HEA, given the vast scope of the measures included in the BiOp. It took two years of concerted effort and over \$2 million for PG&E and DWR to identify, evaluate

² The HEA was negotiated to settle PG&E and DWR's obligations for fish passage on the Feather River related to one DWR and three PG&E hydroelectric projects.

³ A third option, although lacking clear scientific or legal support, would be to allow PG&E and DWR to perform the Lower Yuba Actions and have that performance fulfill both RPA 5 for the Corps and HEA obligations for PG&E and DWR. The BiOp encourages the Corps to work with others to accomplish the RPAs, and the Corps has likewise stated it is willing to pursue a cooperative solution, law permitting. Thus, there is a possibility that this option could work, but it would take more time and resources to determine if and how to do it.

⁴ Section 3.2 of the HEA makes ineligible "existing requirements and commitments", but specifies that such existing requirements and commitments are ineligible as actions under the HEA only if they are expected to occur in a timeframe comparable to implementation under the HEA - which clearly the Lower Yuba Actions would not be under RPA 5.

and select the actions proposed in the Final HEP. To have them rejected because NMFS adopted them two years later in a BiOp does not bode well for future proposals or for the future of such collaborative agreements.

A more detailed discussion of the BiOp's errors as they relate to PG&E's interests are provided in Attachments A and B to this letter.

PG&E supports moving forward with high value recovery actions, including the Lower Yuba Actions proposed in the Final HEP, in a timely manner, and avoiding having such actions get further bogged down in lengthy regulatory, administrative or legal processes. PG&E also supports correcting the BiOp so it will be accurate. PG&E plans to continue working with NMFS, the Corps, YCWA and others to achieve these outcomes.

Yours truly,

A handwritten signature in black ink, appearing to read "David Moller". The signature is fluid and cursive, with a large initial "D" and "M".

DAVID MOLLER
Director, Power Generation

cc: The Honorable John Garamendi – United States House of Representatives
The Honorable Wally Herger – United States House of Representatives
Colonel William Leady, P.E. – U.S. Army Corps of Engineers
Curt Aikens, General Manager – Yuba County Water Agency
David Breninger, General Manager – Placer County Water Agency
Ron Nelson, General Manager – Nevada Irrigation District
Carl Torgersen, Acting Deputy Director – Department of Water Resources

ATTACHMENT A TO PG&E'S COMMENTS
Key Factual and Legal Errors

I. PG&E's Comments Regarding RPA 5 and HEA

A. The Best Available Commercial and Scientific Data Show RPA 5 Should Not Be Part of the BiOp For Operation and Maintenance of Englebright and Daguerre Point Dams.

The BiOp's RPA 5, Channel Restoration Program, includes two actions. These were directly drawn from the Final Habitat Expansion Plan (HEP), where the actions are termed "Recommended Actions," and are as follows:

- Sinoro Bar spawning habitat expansion – expand spawning habitat in the Sinoro Bar geomorphic unit of the Englebright Dam Reach of the Lower Yuba River (described in Section 3.3.1 of the Final HEP); and
- Narrows Gateway spawning habitat expansion – expand spawning habitat in the Narrows Gateway geomorphic unit of the Narrows Reach of the Lower Yuba River (described in Section 3.3.2 of the Final HEP).

The BiOp inappropriately includes these actions. While it is undisputed that they will aid the listed species at issue, these Recommended Actions do not mitigate the effects of the "proposed action" in the BiOp. Notably, the same expert – Dr. Pasternack - who designed the Corps' gravel augmentation program (*see*, RPA 4) consulted on the design of the actions in the Final HEP and is on record explaining that the Corps' program and the actions of the Final HEP are independent of, but complementary to, each other and that the underlying river state developed from different causes. That is, RPA 4 mitigates for loss of gravel due to the presence (i.e., operation and maintenance) of Englebright Dam, but the Final HEP would mitigate for damage caused mostly by mechanized gold mining, and to a lesser extent from construction of Englebright dam (operation and maintenance are part of the "proposed action" the BiOp evaluates but not construction). *See*, Attachment B to PG&E's comment letter item 23; Section 4.3.10 of the Final HEP (the Final HEP was provided to NMFS in 2010); *see also*, Corps' letter to NMFS July 3, 2012 p. 17, para. 4, and Attachment 3 to the Corps letter p. 50, para. 2.

It is clear error to ignore the scientific data provided in support of the Final HEP. The ESA requires that an agency's actions be based on "the best scientific and commercial data available." 16 U.S.C. §1536(a)(2); 50 C.F.R. § 402.14(g)(8). This requirement "prohibits the [agency] from disregarding available scientific evidence that is in some way better than the evidence [it] relies on." *Am. Wildlands v. Kempthorne*, 530 F.3d 991, 998 (D.C. Cir. 2008) (citation omitted). Thus, courts "reject conclusory assertions of agency 'expertise' where the agency spurns un rebutted expert opinions without itself offering a credible alternative explanation." *N. Spotted Owl v. Hodel*, 716 F. Supp. 479, 483 (W.D. Wash. 1988) (citing *Am. Turnboat Ass'n*, 738 F.2d at 1016). The BiOp fails to meet the legal standards because it "disregards available science" by ignoring the reports provided to NMFS with the Final HEP in 2010; it "spurns" those reports without

offering any “credible alternative.” Inclusion of RPA 5 is “conclusory.” To correct this error, NMFS must delete RPA 5 from the BiOp. *See also*, Attachment B items 22 and 23.

Further, the BiOp’s approach to RPAs is flawed. The BiOp sets out the definition of an RPA, including “alternative actions identified during formal consultation that can be implemented in a manner consistent with the scope of the Federal agency’s legal authority and jurisdiction, that is economically and technologically feasible.” (p. 210). First, many RPAs are not “economically and technologically feasible.” *See* Corps’ July 3 letter pp. 19-20. While RPA 5 is not economically or technologically feasible for the Corps within the BiOp’s prescribed timeframe, PG&E, with DWR, stand ready to perform these actions under the HEA; *see also*, Corps’ July 3 comment letter pp. 17-18 (supporting PG&E and DWR performing RPA 5 under the HEA and explaining why RPA 5 should not be part of BiOp). Nor were the alternative actions identified during formal – or even informal – consultation, particularly as to PG&E. The latter step appears to be what NMFS is engaged in now, but that does not correct the problems in the existing BiOp.

B. The Recommended Actions Are “Eligible” under the HEA.

Assuming for the sake of argument that RPA 5 was properly within the scope of the BiOp, it is still an “eligible” action under the HEA. The Final HEP was submitted to NMFS to approve, per the terms of the HEA, in November 2010. PG&E and DWR as Licensees under the HEA have already submitted to NMFS documentation as to why the Final HEP actions are “eligible,” as that term is used in the HEA, as measures to improve habitat under the HEA. This was done in response to NMFS’s letter dated February 18, 2010, commenting on the Draft HEP and raising the issue of the Recommended Actions’ eligibility. Section 4.3.10 of the Final HEP sets out Licensees’ determination that the Recommended Actions are eligible. In summary, the actions are eligible because while they will complement numerous actions being undertaken by others, they are separate and distinct from any “Existing Requirements or Commitments,” as defined in the HEA, in effect at the time the Final HEP was submitted for approval, and they create sufficient habitat to meet the threshold set out in the HEA.

Sections 3.1 and 3.2 of the Amended HEA describe “eligible” actions under the HEA.¹

Section 3.1 states in part: “[a]ctions identified in other venues, including unfunded actions, are acceptable for consideration, provided that implementation of this Agreement results in a net expansion of habitat over any Existing Requirements and Commitments, whether by Licensees or others.”

The term “Existing Requirements and Commitments” is discussed in Section 3.2. Section 3.2 is not a definition or a complete list of actions included under the term. Instead, it is a descriptive section, as can be seen by the term “may”: “Existing Requirements and Commitments *may* include...” (emphasis added). The term is further described as: “intended to encompass actions expected to occur in a timeframe comparable to implementation of habitat expansion action(s) under this Agreement.” While the items following this phrase include RPAs in a BiOp issued at the time NMFS approves the HEP, as noted, the items “may” be “Existing Requirements and Commitments” but are not necessarily so. And, given the time overlap of the approval process

¹ The language was the same in the original HEA.

and the unfortunately speedy issuance of the BiOp on a Court-ordered schedule, the nominal overlap can be seen as an inadvertent effect outside the intent of the HEA, which controls.

The key consideration, then, is whether the Final HEP Recommended Actions can be implemented in a timeframe *before* actions under the BiOp. In fact, the Final HEP Recommended Actions can be implemented much sooner than RPA 5 under this BiOp. The Licensees can begin the design and permitting phases of the Recommended Actions as soon as NMFS approves the Final HEP. Assuming a 1- to 2-year design/permitting period and a 1- to 2-year construction period, the Licensees would have the Proposed Actions implemented in 2 to 4 years from receiving final approvals. By contrast, it is certain that the Corps will face much more delay. From the authorization and funding standpoints, the Corps will need to acquire both through federal legislation, as noted in the cover letter, a time-consuming process (*see also* Corps' July 3 comments pp. 17-18) significantly delaying implementation, if it ever occurs.

II. PG&E's Comments Regarding Drum-Spaulding and Narrows I Projects

A. Important Factual Errors Distort BiOp's Analysis

PG&E holds two Federal Energy Regulatory Commission licenses for hydroelectric projects on the Yuba River: (i) Drum-Spaulding, some 40 miles upstream of Englebright Dam, and Narrows I, about 0.2 miles downstream of Englebright Dam. To the extent the BiOp appears to claim these PG&E facilities affect operation or maintenance of Englebright and Daguerre Point Dams, PG&E disputes the factual and legal basis for the claim. The claim is spuriously supported by supposed – but erroneous - operational links between the facilities of the two projects, and between the facilities and the dams. In addition, PG&E disputes that the Corps' authority extends to Narrows I, let alone Drum-Spaulding, due to the limited scope of the Corps' reservation.

The BiOp lists 14 key “Assumptions” supporting its conclusions (pp. 55-6). Of these, the set of assumptions addressing PG&E's effects on the Yuba River is simply wrong. The BiOp states that “PG&E's operational decisions at Spaulding Dam, Milton Dam, Bowman Dam, and the Bowman-Spaulding Canal affect flows and management decisions related to operation of the Narrows I Powerhouse at Englebright Dam.” (p. 56, Assumption “j”).

First, PG&E does not own Milton Dam, Bowman Dam, or the Bowman-Spaulding Canal.

Second, “PG&E's operational decisions at Spaulding Dam ...” do not “affect flows and management decisions related to operation of the Narrows I Powerhouse at Englebright Dam.” The only “link” between Drum-Spaulding and Narrows I is that PG&E owns both. To claim, as NMFS apparently does, that this one fact means they are operationally related, is demonstrably false on its face.

Narrows I and Drum-Spaulding operate under separate licenses issued by FERC. Drum-Spaulding is operated in accordance with a coordinated operations agreement with Nevada Irrigation District's (NID) Yuba-Bear Hydroelectric Project (Yuba-Bear). In fact, NID owns Milton Dam, Bowman Dam, and the Bowman-Spaulding Canal. The Yuba-Bear and Drum-Spaulding projects have each applied for new licenses from FERC, and those two projects'

relicensings are being processed together because some facilities are, to a certain extent, “interrelated and interdependent” as those terms are used in the Endangered Species Act (ESA).

Narrows I is nowhere in that process because its operations are completely independent from Drum-Spaulding. Likewise, Drum-Spaulding’s license (and Yuba-Bear’s) was not an issue when Narrows I’s FERC license was renewed. In fact, Narrows I is governed by the Yuba Accord (discussed p. 5 of BiOp although the discussion leaves out PG&E’s involvement, which was due to Narrows I). Narrows I operations are influenced most by operation of YCWA’s Colgate powerhouse. In addition, the BiOp errs in stating that PG&E’s Narrows I license expires in 2016 - it expires in 2023. The BiOp also errs in stating that YCWA’s Narrows II license expires in 2013 - that one expires in 2016 (p. 152). Easily checked and pertinent facts such as these call into question the general soundness of all the reasoning in the BiOp.

In addition, several other factual errors are evident in the analysis that led the BiOp to consider Drum-Spaulding and Narrows I as “interrelated and interdependent” with Englebright dam as they may affect spring-run Chinook salmon and Central Valley steelhead in the Yuba River. The basis of the errors is that the BiOp (again) ignored the best available scientific and commercially available data, in the form of the studies performed in the FERC relicensing of Drum-Spaulding, and other temperature studies in the 1980s. The studies disprove the following “facts” used in the BiOp:

- “Low flows from Spaulding Dam in the South Yuba River create a thermal barrier to fish passage during the summer and fall” (p.3) – The best available science shows unimpaired flow would be a similar barrier; water temperatures in the South Yuba River upstream of Lake Spaulding already exceed 20°C during the summer, despite flow supplementation from upstream impoundments (PG&E 1982²; Drum-Spaulding Project Final License Application, Water Temperature Monitoring Technical Report, Attachment 2-2E, April 2011) . Water temperature modeling shows that higher flows from Lake Spaulding would not allow cold water suitable for anadromous fish to reach Englebright Reservoir even with combined releases of 300 cfs in July (150 cfs from Lake Spaulding and 150 cfs from the Bowman-Spaulding Conduit via Canyon Creek) (Drum-Spaulding Project Final License Application, Exhibit E pages E6.2-152 and E6.2-153, April 2011);
- The South Yuba is a “historic habitat that was accessible to spring-run Chinook salmon and Central Valley steelhead” (p. 9) - Because of natural low flows and high summer water temperatures, spring-run Chinook salmon did not historically live in the South Yuba River, and it would have provided only marginal habitat for steelhead. Yoshiyama et al. 2001³ speculate that spring-run Chinook salmon could have occurred as far

² PG&E. 1982. South Yuba River Temperature and Flow Maintenance, 1980. Transmitted to CDFG and USFS by letter dated August 18, 1982.

³ Yoshiyama, E. R. Gerstung, F. W. Fisher, and P. B. Moyle. 2001. Historical and Present Distribution of Chinook Salmon in the Central Valley Drainage of California. *In*: Brown, R.L., editor. Contributions to the Biology of Central Valley Salmonids. Volume 1. California Department of Fish and Game Fish Bulletin 179:71-177.

upstream as the mouth of Poorman Creek, however we now know that under unimpaired conditions the South Yuba River would not have suitable water temperatures to support spring-run. (Drum-Spaulding Project Final License Application, Exhibit E pages E6.5-7 to E6.5-28, Hydrology DVD in Appendix E12, and Water Temperature Monitoring Technical Report, April 2011);

- The amount of water diverted from the South Yuba River by Drum-Spaulding (in addition to that separately diverted by the Yuba-Bear on the Middle Yuba River) significantly “affect[s] flows into Englebright Reservoir, and the flow in the Yuba River downstream of Englebright... This diversion of water out of the watershed directly affects the amount of water available for instream flows downstream of Englebright Dam” (p. 10) – Again, the flows and water temperatures below Englebright Reservoir are not significantly affected by Drum-Spaulding diversions. (Drum-Spaulding Project Final License Application, Exhibit E pages E6.5-7 to E6.5-28, April 2011).
- “Management and operational decisions made at [Drum-Spaulding] affect the temperature, flow timing and volume, and velocities in the lower Yuba River.” (p. 10) – For the same reasons cited above, this is not true. (Drum-Spaulding Project Final License Application, Exhibit E pages E6.5-7 to E6.5-28, April 2011.)

In a nutshell, the studies and information referenced above demonstrate that the effects of the upstream Drum-Spaulding diversions do not cause adverse effects to conditions below Englebright Reservoir or to summer water temperatures above Englebright Reservoir.

Thus, the basic assumptions NMFS makes about PG&E’s facilities are in error. Because NMFS is involved in the Yuba Accord and in the Drum-Spaulding relicensing, it had the relevant facts at its fingertips and cannot argue that the information was not available at the time NMFS issued the BiOp.

As the Corps and YCWA have pointed out in their comments, there are additional errors in the way the BiOp applies the law to the facts that warrant reconsideration of the BiOp’s conclusions. The BiOp initially states the concepts correctly but the concepts are not applied in line with the actual legal definitions or facts, or reasonable factual assumptions.

Significantly, the BiOp applies the key terms “proposed action,” “action area,” and “interrelated and interdependent” incorrectly. The Federal “proposed action” is initially defined acceptably as “the Corps’ continued operation and maintenance (O&M) of Englebright and Daguerre Point Dams” (p. 11). However, later in the BiOp the “proposed action” is defined to include dam existence, which is inconsistent and incorrect. BiOP pp. 116, 214, 243; *see also* Corps’ July 3 letter p. 4.

Similarly, “action area” is initially defined acceptably, including the citation to 50 CFR 402.02. (p. 9) “Action area” is “all areas to be affected directly or indirectly by the Federal action.” But, as discussed above, the BiOp’s concept of what areas the proposed action actually affects is incorrectly theorized to include the South Yuba River and Drum-Spaulding. Thus, the BiOp assumes without support that the “action area” includes “areas of historic habitat upstream from

Englebright Reservoir” because the “proposed action” is deemed to include dam existence, which blocks access upstream. As noted, “proposed action” should not include dam existence because dam existence is not the “proposed action” as submitted by the Corps. Even if one were to accept the incorrect definition of “proposed action,” or that the “action area” should include historic habitat upstream of Englebright Dam because the existence of Englebright Dam blocks fish passage, the BiOp’s conclusion is still wrong. That is because the South Yuba was not historical habitat. *See* Attachment B, Section B. Tellingly, the BiOp cites no support for this contention. Based on modeled temperatures at unimpaired flow levels, as noted above, the South Yuba River would not have been spring-run Chinook salmon habitat and would have been only marginal for steelhead (Drum-Spaulding Project Final License Application, Exhibit E pages E6.5-7 to E6.5-28, Hydrology DVD in Appendix E12, and Water Temperature Monitoring Technical Report, April 2011).

In addition, the BiOp’s statement on p. 8 that Drum-Spaulding is “interrelated and interdependent” with operation and maintenance of Englebright (or Narrows I) is similarly wrong (it is unclear whether NMFS claims Drum-Spaulding is “interrelated and interdependent” with the dam or with Narrows I). The ESA regulations define “interdependent actions” as those that have no independent utility apart from the action under consideration. 50 CFR 402.02. Clearly, Drum-Spaulding has independent utility apart from Englebright Dam and it would continue to operate the same regardless of Englebright Dam’s, or Narrows I’s, existence. Likewise, “interrelated actions” are defined as those that are part of a “larger action” and depend on the larger action for their justification. This is also not the case for Drum-Spaulding, because it doesn’t depend on the apparent “larger action” of Englebright Dam, or Narrows I, operating for Drum-Spaulding’s justification.⁴

The BiOp repeats these errors in various forms throughout its length and this comment does not purport to catch all the expressions of the errors. But this shows that the bases for the BiOp’s conclusions are completely missing.

The BiOp also appears to direct the Corps to stretch legal powers past their limit to sweep Drum-Spaulding into the BiOp’s over-broad net. The BiOp seems to assert that the Corps has authority under section 4(e) of the Federal Power Act to assert broad conditions on entities applying for licenses from FERC “both on and off of Federal reservations.” (p. 214) To the extent this statement is intended to direct the Corps to impose conditions on Drum-Spaulding in its current relicensing, it is incorrect for at least two reasons. The Corps’ “reservation” does not touch Drum-Spaulding in any way. As discussed above, that Project is not “interrelated and interdependent” with the operation of Englebright or Daguerre Point Dams. Drum-Spaulding does not affect and it is not affected by the “proposed action.” In addition, the Corps owns no land or water rights in the Drum-Spaulding project boundary.

Further, the Corps’ reservation of authority does not extend to Drum-Spaulding, or to Narrows I because Englebright is not a “work” of Drum-Spaulding or of Narrows I and, more importantly,

⁴ Further, the 1986 rulemaking promulgating these ESA regulations stated that the “interrelated and interdependent” concept is governed by a “but for” test: would the project not operate but for the continued operation of the larger action. Clearly, Drum-Spaulding doesn’t meet this test either.

fish passage is not a purpose of the authorized Corps project. Section 4(e) states that 4(e) conditions must be for the “adequate protection and utilization of such reservation,” but fish passage is not an authorized purpose of Englebright. 16 U.S.C. Section 797(e); *see also* Corps’ July 3 letter pp. 7-8. Thus, NMFS’ assumption that the Corps can implement the BiOp’s RPAs by relying on the Corps’ supposed powers is faulty.

III. Conclusion

To rectify these issues, NMFS should initiate consultation with PG&E; it should revise this BiOp to delete RPA 5 and any reference to Drum-Spaulding or Narrows I, and; NMFS should immediately issue a letter clarifying that references to Drum-Spaulding and Narrows I in no way were meant to imply that the Corps has or ought to seek authority over those projects.

ATTACHMENT B TO PG&E'S COMMENTS
Key Technical Errors

PG&E Technical Comments on NMFS February 29, 2012 Biological Opinion (BiOp) on the Operation and Maintenance of Englebright and Daguerre Point Dams

PG&E agrees with and supports the many technical comments provided by the Corps of Engineers (Corps) and Yuba County Water Agency. In addition to those comments, PG&E has also identified the following comments:

A. General Comments

1. The BiOp does not include information from important existing scientific studies, including those underlying the Final Habitat Expansion Plan (DWR and PG&E 2010), studies of the South Yuba River from the 1980s (PG&E 1982), and studies from the ongoing renewal of PG&E's Federal Energy Regulatory Commission license for the Drum-Spaulding Project (PG&E 2011). This additional information should be included in the BiOp, and the conclusions revised accordingly.

BiOp Section IV. Status of the Species and Critical Habitat

2. Several programs/projects are discussed under the "Ecosystem Restoration" section (p. 121, para. 2 through p.122, para. 1). However, the treatment of restoration activities is incomplete. Two obvious omissions from this discussion are the Battle Creek Chinook Salmon and Steelhead Restoration Project and the San Joaquin River Restoration Program.

B. Comments Related to Conditions Upstream of Englebright Dam

BiOp Sections I. Environmental Setting, and V. Environmental Baseline

3. NMFS statement that "Low flows from Spaulding Dam in the South Yuba create a thermal barrier to fish passage during summer and fall" (p. 3, para. 1; also, p. 131, para. 3; p.147, para. 3; p. 160, para. 4; p. 165, para. 1) is incorrect and should be revised. The best available calculations of unimpaired flows in the South Yuba River during the summer and fall are not appreciably different than the current minimum flow releases from Spaulding Dam; for example, the current and unimpaired August 50% exceedance flows are 6.2 cfs and 7.8 cfs, respectively (PG&E 2011). On page 125, NMFS cites Yoshiyama et al (2001) as indicating the upstream limit of salmon migration in most years as the confluence with Humbug Creek. Flow and temperature data from DWR (2007), the Drum-Spaulding relicensing, and the Yuba Salmon Forum, clearly show that that this area cannot support spring-run Chinook; therefore, the observations cited by Yoshiyama et al (2001) must describe fall-run Chinook. Humbug Creek is well below the zone of thermally suitable holding habitat for spring-run expected under unimpaired flows, providing substantial evidence that releases from Spaulding Dam did not significantly alter habitat for spring-run Chinook. Similarly, since steelhead rearing is generally limited by summer low flows

and high temperature conditions, minimum releases from Spaulding Dam are also not likely to affect steelhead populations. This is further verified by the fact that mean daily water temperatures in the South Yuba River above Lake Spaulding reach temperatures above 20° C. Thus, temperatures at a point at least 7 miles upstream of the highest point anadromous fish might reach are already too warm for spring-run Chinook holding and only marginal for trout (PG&E 1982; PG&E 2011, Drum-Spaulding Project Final License Application, Water Temperature Monitoring Technical Report, Attachment 2-2E, April 2011).

4. NMFS incorrectly reports (p.131) that DWR (2007) found that the current minimum flows from Lake Spaulding result in a thermal barrier to salmonids in the South Yuba River. DWR (2007) did find that water temperatures were suitable for the majority of the migration period, and that no thermally suitable habitat for spring-run Chinook occurred downstream of natural migration barriers on the South Yuba River. As noted in comment 3 above, this same condition would also exist without the Drum-Spaulding Project.
5. NMFS incorrectly reports that PG&E plants diploid rainbow trout in Englebright Reservoir, which are reproductively viable and able to interbreed with wild steelhead (p. 136, para. 2; p. 177, para. 6; p. 192, para. 3). Since 2010, PG&E has planted only sterile triploid trout in Englebright Reservoir. This is a requirement of the stocking permit from California Department of Fish and Game.
6. The sentence “The Upper Yuba River Study looked at increasing the flows in the South and Middle Yuba rivers from 5 to 50 cfs, which would add 5.6 miles of spawning habitat for spring-run Chinook salmon and Central Valley steelhead (UYRSPST 2007)” (p. 147, paragraph 4) should be revised. The Upper Yuba River Studies Program (which should be cited as DWR 2007) only modeled a 50-cfs flow release on the Middle Yuba River, not the South Yuba. Further, the 50-cfs modeled flow was unilaterally selected by the consultants working for DWR, and does not reflect either a group consensus or water availability from NID’s Yuba-Bear Project.
7. NMFS incorrectly suggests that spring-run Chinook holding habitat in the South Yuba River is “thermally impaired due to water exports and extremely low flows during the hot summer months.” (p. 160, para. 4). In fact this condition is unrelated to diversion at the Drum-Spaulding Project. The best available scientific data shows the South Yuba River has never been thermally suitable for spring-run Chinook holding. As discussed in comment 3, unimpaired flows in the South Yuba River are naturally extremely low during the summer, and summer water temperatures are unsuitable for spring-run Chinook holding even upstream of Lake Spaulding.
8. The discussion on juvenile steelhead rearing habitat in the upper Yuba River watershed appears to present exaggerated values for available habitat. It is not clear what flow scenario NMFS is using for its reported estimates. Assuming NMFS is using habitat values under current flow conditions, here’s the comparison with Stillwater (2012): South Yuba River (SYR) 0.3 miles, cited in Stillwater (2012) vs. 17.6 miles, cited in the BiOp; SYR tributaries 15.9 miles for both; Middle Yuba River

(MYR) 7.5 vs. 17.9 miles; MYR tributaries 11.5 miles for both; North Yuba River (NYR) above New Bullards Bar Reservoir 34.7 for both; NYR tributaries 43.5 vs. 51.4 miles; New Bullards Bar Reach 3.7 vs. 4.2 miles; New Bullards Bar Reach tributaries 0.6 miles vs. not reported (p. 163, para. 5; also, p.176, para. 2; p. 181, para. 3).

C. Comments Related to Conditions Downstream of Englebright Dam

BiOp Section III. Analytical Approach.

9. “While the lower Yuba River does have generally cool water temperatures, they are not consistently suitable for salmonids throughout the year...” (p. 55, para. 2; also, p. 174, para. 6; p. 189, para. 2). NMFS’ statement is misleading and does not consider the balance of interests reflected by the Yuba River Accord. A recent assessment by the Yuba River Management Team (RMT), which includes NMFS, concluded “that implementation of the Yuba Accord provides a suitable thermal regime for target species in the lower Yuba River, and does not recommend water temperature-related operational or infrastructure modifications at this time (Yuba RMT 2010).”

BiOp Section V. Environmental Baseline.

10. NMFS discussion of the possible impact of climate change on the Lower Yuba River needs to be revised to discuss the extent to which the Yuba River below Englebright Dam will be protected as a result of cold water releases from New Bullards Bar Reservoir (p. 152, para. 5).
11. On page 153, para. 4, NMFS makes the first of multiple statements that the lower Yuba River suffers from an unstable food source from fluctuating aquatic macroinvertebrate populations and low exposure to marine-derived nutrients (other locations are p. 159, para. 3; p. 175, para. 6; p. 183, para. 5). The claim of low exposure to marine derived nutrients is in error and should be removed. The population of Chinook salmon (both fall-run and spring-run) spawning and dying in Yuba River is usually greater than 10,000 fish annually; this constitutes a significant input of marine derived nutrients to the lower Yuba River ecosystem. NMFS should present evidence to support its conclusion of fluctuating aquatic macroinvertebrate populations, or remove this statement also.

BiOp Section VI. Effects of Action on Listed Species

12. On page 178, para. 1, NMFS incorrectly reports that Narrows I Powerhouse is one mile downstream of Englebright Dam. In fact, Narrows I is approximately 0.2 miles downstream of Englebright Dam, as noted on page 324 of the Corps BA.

In the same paragraph, NMFS also incorrectly reports that the turbine at PG&E’s Narrows I Powerhouse is a “Pelton wheel”, which would cause 100% mortality of entrained fish. In fact, Narrows I is equipped with a Francis turbine. Based the results reported by Eicher et al. (1987) for Francis units with comparable head and RPM values, a mortality rate for resident fish passing through Narrows I could be expected to be 25-30 %.

13. NMFS' assertion that spring-run Chinook salmon and Central Valley steelhead are likely to respond to attraction flows in the Narrows I tailrace and thereby lose energy reserves is unsubstantiated (p. 168, para. 6; also, p. 169, para. 2).
14. NMFS states that "Green sturgeon repeatedly leaping into the concrete apron at Daguerre Point dam are likely to be harmed by loss of energy reserves needed for reproduction or wounded by the dam" (p. 173, para. 5), but does not provide any support for this statement. A biologist with extensive experience working on the lower Yuba River has never observed this behavior by sturgeon at Daguerre Point Dam (D. Massa, Pacific States Marine Fisheries Commission, personal communication).

BiOp Section VII. Effects of the Action on Critical Habitat.

15. "Since the 2005 determination of critical habitat for spring-run Chinook salmon and Central Valley steelhead, draft recovery planning has identified habitat upstream of Englebright Dam as essential for the recovery of these species (NMFS 2009)." (p. 190, para. 1; also, p. 203, para 2; p. 204, para. 4). The draft Recovery Plan identifies all three forks as candidates in a potential recovery scenario, but does not say that they are specifically essential for recovery (draft plan pp. 100, 115, 116).

In this same paragraph, the BiOp suggests that the Yuba River below Englebright Dam has "highly degraded habitat characteristics", in contradiction to NMFS draft Recovery Plan, which found that the lower Yuba River below Englebright Dam has a high potential to support a viable independent population of spring-run Chinook salmon (p. 115) and steelhead (p. 140), and that the continued implementation of the Yuba Accord will address concerns with appropriate flow regimes, water temperature, and habitat availability.

BiOp Section IX. Integration and Synthesis.

16. NMFS reliance on *O. mykiss* habitat in the upper Yuba River drainage is not relevant to the correct project baseline, i.e., with Englebright Dam in place. (p. 207, para. 3)
17. NMFS suggests that temperatures below Daguerre Point Dam may cause residualization of Central Valley steelhead but does not provide any support for this claim (p. 207, para. 3). The Yuba RMT (2010) found that water temperatures at both Daguerre and Englebright dams could exceed 55 F by a small amount at the beginning and end of the October through mid-April smolt emigration period, that it was significantly cooler than the Feather River downstream, and that the benefits of further cooling in the lower Yuba were questionable.

BiOp Section XI. Reasonable and Prudent Alternative

18. Overall, the schedule for implementation of the RPA actions is unrealistic (initially in Table X-I-b, p. 219, and then in the discussion of all fish passage actions, pp. 222-233). Insufficient time is being allowed for all phases of implementation, particularly design, permitting, and testing.

19. NMFS briefly discusses the issue of source populations for the reintroduction of anadromous salmonids in the upper watershed, and indicates that “The Steering Committee and Technical Committee will work in consultation with the NMFS Southwest Fisheries Science Center to develop adult relocation source populations and abundance targets.” (p. 227, para. 2). The issue of selecting a source population for reintroduction is a huge one that deserves much more attention in the BiOp. Decisions on appropriate source populations will require extensive time and effort to evaluate population genetics and risks to wild populations.
20. NMFS indicates that one of the performance standards for the long-term fish passage plan and program will be the “demonstrated ability to withstand long-term effects of climate change” (p. 231, para. 6). An extensive modeling effort would be required to fully evaluate the potential effects of climate change on flow and temperature conditions in the targeted area for fish reintroduction. The associated time and effort has not been included in the BiOp.
21. The RPA action GPA3 of the Gravel Augmentation Program requires the Corps to “place a minimum of 15,000 short tons of graded and washed gravel and cobble into the Englebright Dam Reach annually” (p. 233, para. 7). This level of annual gravel introduction far exceeds that recommended in the *Gravel/Cobble Augmentation Plan (GAIP) for the Englebright Dam Reach of the Lower Yuba River, CA* prepared for the Corps by Dr. Greg Pasternack, UC Davis stream geomorphology expert (Pasternack 2010). The best approach for determining the volume of gravel introduction on an annual basis would be to use the GAIP as a guide and then regularly consult with Dr. Pasternack.
22. The BiOp fails to address important existing scientific studies related to the Habitat Expansion Agreement (HEA)¹, despite RPA5 (Channel Restoration Program) obviously being based directly on actions proposed by PG&E and DWR in the Final Habitat Expansion Plan (Final HEP) that was developed in fulfillment of the HEA (DWR and PG&E 2010). The failure to reference the HEA and Final HEP, particularly in relation to RPA 5, gives the impression that NMFS did not want to draw a connection between the actions proposed in the Final HEP and those included in the BiOp. Unfortunately, various sections of the BiOp could have benefitted greatly from use of, and reference to, the HEA and Final HEP, as indicated by the following examples: “Key Consultation Considerations” (pp. 5-9) – The HEA and Final HEP should have been important consultation elements during development of the BiOp; yet, they are not addressed here; “Cumulative Effects” (pp.195-198) – This section of the BiOp should have included discussion of possible effects related to

¹ Amended Habitat Expansion Agreement for Central Valley Spring-Run Chinook Salmon and California Central Valley Steelhead; FERC Project Nos. 1962, 2100, 2105, and 2107. Parties to the agreement: American Rivers; California Department of Fish and Game; California Department of Water Resources; Pacific Gas and Electric Company; State Water Contractors, Inc.; U.S. Forest Service; National Marine Fisheries Service; and U.S. Fish and Wildlife Service. March 2011.

- implementation of the Final HEP and the inter-relationship between the BiOp and the Final HEP; “(RPA) 5. Channel Restoration Program” (pp. 234-236) – Action CR 1 of the program is obviously based on the Final HEP, yet as indicated above, the Final HEP is not referenced here; additionally, the description of Action CR1 is lacking in detail, which could have been provided through reference to the Final HEP. Most importantly, by not addressing the Final HEP, the BiOp fails to recognize that PG&E and DWR are ready, willing, and able to implement the spawning habitat expansion actions of the Final HEP, which are the same as those included in CR1 of RPA 5.
23. The effects that RPA 5 would mitigate are not due to the operation and maintenance (O&M) activities associated with Englebright and Daguerre Point dams (i.e., the “proposed project”), but rather due to the combination of Englebright Dam construction and mechanized gold mining activities downstream of the dam. The BiOp indicates that the rationale for the Channel Restoration Program is related to “habitat ... lost under Englebright Reservoir and altered downstream of Englebright Dam” (p. 236, para. 4). The habitat lost under the reservoir is not the result of O&M (i.e., the “proposed project”), but the result of reservoir creation through dam construction. The altered habitat downstream is largely the result of mechanized gold mining (Pasternack 2012). Thus, RPA 5 is not an appropriate measure to be included in this BiOp. The gravel deficit that occurs in the Englebright Dam Reach of the Lower Yuba River (i.e., the reach extending from Englebright Dam approximately 1 mile downstream to Deer Creek) is the result of O&M at Englebright Dam. RPA 4 (Gravel Augmentation Program) requires implementation of the Corps’ Gravel/Cobble Augmentation Implementation Plan (GAIP), which is clearly designed to erase the gravel deficit in the Englebright Dam Reach and does not address effects beyond those caused by O&M (Pasternack 2010). The degradation of salmon spawning habitat in the Englebright Dam Reach and the Narrows Reach (i.e., immediately downstream of the Englebright Dam Reach) is primarily the result of Englebright Dam construction, which created a source of shot rock, and mechanized gold mining. The spawning habitat expansion actions proposed in the Final HEP, which were incorporated into RPA 5, are designed to address this issue of degraded habitat, not the effects of O&M.
24. Even with the inclusion of RPA 5 in the BiOp, the spawning habitat expansion actions proposed in the Final HEP remain eligible for the following reason. Eligible actions under the HEA include actions identified in other venues provided that implementation of those actions under the HEA results in a net expansion of habitat over any “Existing Requirements and Commitments”. The HEA further states that the term “Existing Requirements and Commitments” is intended to encompass actions expected to occur in a timeframe comparable to implementation of actions under the HEA. Thus, if the same actions can be implemented significantly sooner

under the Final HEP than under the RPA 5, then the actions proposed in the Final HEP are eligible. In fact, these actions can be implemented under the Final HEP within 2 to 4 years, whereas the Corps faces serious delay in implementing the actions due to regulatory proceedings and funding issues. It should also be noted that, if the BiOp was deemed to make the Final HEP actions ineligible, it is unlikely that any actions in the Yuba River watershed (including fish passage actions) could meet the HEA eligibility criteria due to the vast scope of the BiOp RPA measures. For further information on these issues, see DWR's and PG&E's letter dated April 20, 2012 regarding "Habitat Expansion Agreement Annual Report and Comments in Response to 60-Day Consultation Period" (DWR and PG&E 2012).

25. The BiOp establishes the importance of parties working together to implement actions to aid listed fish species. The BiOp directs the Corps to "implement a process whereby" many other entities are "engaged in a process for listed species conservation." (p. 210, para. 2). The BiOp also encourages the Corps to work with other parties to implement fish passage actions (p. 221, para. 1). While these discussions regarding implementation of RPAs with other entities do not specifically include PG&E or DWR in their capacity as Licensees under the HEA, PG&E and DWR are not excluded. The Corps ought to be able, then, to allow another party (e.g., PG&E and DWR) to implement an RPA (e.g., RPA 5) and still be in compliance with the BiOp, while PG&E and DWR would be in compliance in their capacity as Licensees under the HEA.
26. NMFS' treatment of how implementation of the RPA actions would avoid jeopardy is not particularly strong or convincing (p. 243, para. 3, through p. 248, para. 1). The discussion is lacking in any sort of quantitative information regarding amount of habitat to be restored and numbers of fish to be produced.

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