33.10.32 Pacific Gas & Electric Company

PGE2

From: **Klobas, John** <JTK2@pge.com>
Date: Mon, Sep 2, 2013 at 10:22 AM
Subject: PG&E Information Request
To: "kchow@usbr.gov" <kchow@usbr.gov>
Cc: "nrezeau@fs.fed.us" <nrezeau@fs.fed.us>

Katrina,

PGE2-1 PG&E is looking for two things that would be very helpful in reviewing and commenting on BOR's Draft Environmental Impact Statement (DEIS):

1) The proposed high water line, shown in either a GIS Shape file or a KML file.

PGE2-2 2) A hard copy, a file, or a link to the Shasta Lake Water Resources Investigation (SLWRI) Pit 7 Dam and Powerhouse Facilities Report (Reclamation 2008); this report is referenced on page3-26, of the DEIS - Engineering Summary Appendix.

I would appreciate if you could provide both of the above items to me as soon as possible so PG&E may complete an adequate review of the DEIS and provide timely comments.

Thank you!

John Klobas, MBA, PMP
PG&E Hydro Licensing
Senior Project Manager
McCloud-Pit & UNFFR
Internal 8-765-5653
External (530) 335-5653
Mobile (530) 941-2002
john.klobas@pge.com

Responses to Comments from Pacific Gas & Electric Company

PGE2-1: Pit 7 Dam and Powerhouse Facilities Report was provided to PG&E via email on September 17, 2013.

PGE2-2: Reclamation provided the information that PG&E requested via email on September 20, 2013.

33.10.33 Pacific Gas & Electric Company

9/30/13 DEPARTMENT OF THE INTERIOR Mail - PG&E Information Request PGE3

CHOW, KATRINA <kchow@usbr.gov>

PG&E Information Request

Klobas, John <JTK2@pge.com> Mon, Sep 23, 2013 at 10:29 AM
To: "Danelle Bertrand (Danelle.Bertrand@mwhglobal.com)" <Danelle.Bertrand@mwhglobal.com>
Cc: "kchow@usbr.gov" <kchow@usbr.gov>, "Faraglia, Annette (Law)" <ARF3@pge.com>, "Cummings, Jody E" <JECi@pge.com>

Danelle,

Thank you for sending the GIS shape files.

PGE3-1 PG&E has transmission lines and distribution lines as well as the Pit 7 development that will be impacted by the raising of Shasta Dam. Consequently, PG&E needs additional files to fully evaluate impacts to all PG&E facilities.

PGE3-2 I've included Jody Cummings on this E-mail; Jody is a GIS application engineer. Perhaps the two of you can work out the file size issue and determine which files are necessary to properly evaluate impacts to PG&E facilities.

Jody, please keep me posted on the progress.

Thank you!

John Klobas, MBA, PMP
PG&E Hydro Licensing
Senior Project Manager
McCloud-Pit & UNFFR
Internal 8-765-5653
External (530) 335-5653
Mobile (530) 941-2002
john.klobas@pge.com<mailto:john.klobas@pge.com>

From: Danelle Bertrand [mailto:Danelle.Bertrand@mwhglobal.com]
Sent: Friday, September 20, 2013 9:57 AM
To: Klobas, John
Cc: Chow, Katrina C; Mary Paasch; Klobas, John
Subject: Re: PG&E Information Request

John,

Attached are the GIS shape files PG&E requested of the high water lines under the 6.5-foot, 12.5-foot, and 18.5-foot Shasta Dam raise alternatives presented in the SLWRI Draft EIS. The extent of the spatial data has been limited to the area above the Pit 7 afterbay weir to keep file sizes reasonable.

Please let us know if you have any questions about this data.

Warm Regards,

Danelle

9/30/13 DEPARTMENT OF THE INTERIOR Mail - PG&E Information Request

From: Klobas, John
Sent: Monday, September 02, 2013 10:22 AM
To: 'kchow@usbr.gov<mailto:kchow@usbr.gov>'
Cc: 'nrezeau@fs.fed.us<mailto:nrezeau@fs.fed.us>'
Subject: PG&E Information Request

Katrina,

PG&E is looking for two things that would be very helpful in reviewing and commenting on BOR's Draft Environmental Impact Statement (DEIS):

1) The proposed high water line, shown in either a GIS Shape file or a KML file.

2) A hard copy, a file, or a link to the Shasta Lake Water Resources Investigation (SLWRI) Pit 7 Dam and Powerhouse Facilities Report (Reclamation 2008); this report is referenced on page3-26, of the DEIS - Engineering Summary Appendix.

I would appreciate if you could provide both of the above items to me as soon as possible so PG&E may complete an adequate review of the DEIS and provide timely comments.

Thank you!

John Klobas, MBA, PMP
PG&E Hydro Licensing
Senior Project Manager
McCloud-Pit & UNFFR
Internal 8-765-5653
External (530) 335-5653
Mobile (530) 941-2002
john.klobas@pge.com<mailto:john.klobas@pge.com>

–

Katrina Chow

Project Manager/Civil Engineer

Bureau of Reclamation, Sacramento

2800 Cottage Way, Sacramento, CA 95825

916-978-5067

kchow@usbr.gov<mailto:kchow@usbr.gov>
[Quoted text hidden]

2 attachments

JohnKlobas_Pit7are_Pools_Contours_20130912.zip
2957K

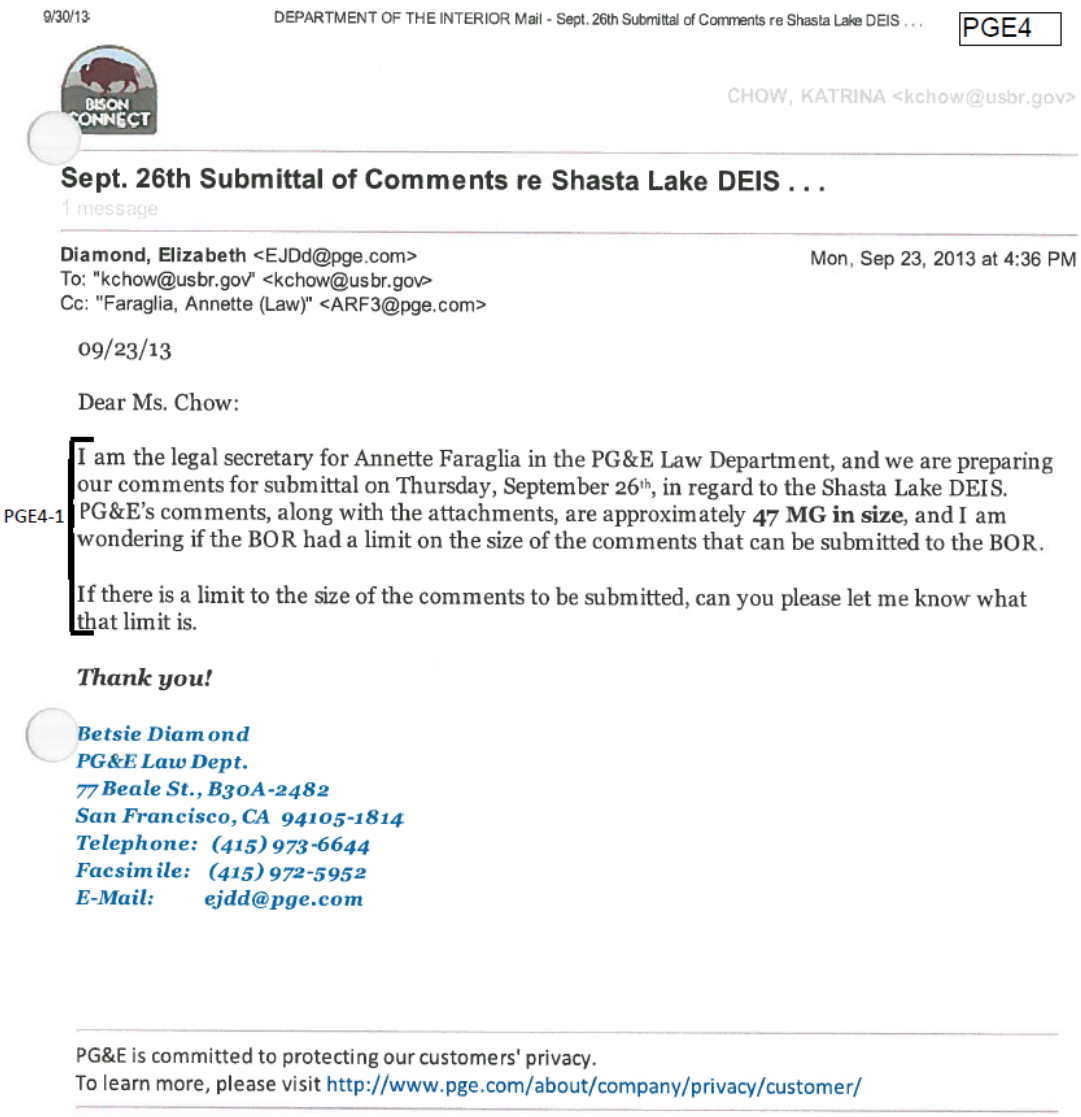
Pit7area_Pools_Contours_20130912.zip
2957K

Responses to Comments from Pacific Gas & Electric Company

PGE3-1: Reclamation provided the requested information to PG&E in response to this comment.

PGE3-2: Reclamation provided the requested information to PG&E in response to this comment.

33.10.34 Pacific Gas & Electric Company



9/30/13 DEPARTMENT OF THE INTERIOR Mail - Sept. 26th Submittal of Comments re Shasta Lake DEIS . . . PGE4

CHOW, KATRINA <kchow@usbr.gov>

Sept. 26th Submittal of Comments re Shasta Lake DEIS . . .

1 message

Diamond, Elizabeth <EJDd@pge.com> Mon, Sep 23, 2013 at 4:36 PM
To: "kchow@usbr.gov" <kchow@usbr.gov>
Cc: "Faraglia, Annette (Law)" <ARF3@pge.com>

09/23/13

Dear Ms. Chow:

PGE4-1 I am the legal secretary for Annette Faraglia in the PG&E Law Department, and we are preparing our comments for submittal on Thursday, September 26th, in regard to the Shasta Lake DEIS. PG&E's comments, along with the attachments, are approximately **47 MG in size**, and I am wondering if the BOR had a limit on the size of the comments that can be submitted to the BOR.

If there is a limit to the size of the comments to be submitted, can you please let me know what that limit is.

Thank you!

Betsie Diamond
PG&E Law Dept.
77 Beale St., B30A-2482
San Francisco, CA 94105-1814
Telephone: (415) 973-6644
Facsimile: (415) 972-5952
E-Mail: ejdd@pge.com

Responses to Comments from Pacific Gas & Electric Company

PGE4-1: Comment noted.

33.10.35 Pacific Gas & Electric Company

Pacific Gas and Electric Company®

PGE5

COPY

Annette Faraglia
Attorney at Law

Street/Courier Address:
Law Department
77 Beale Street, B30A
San Francisco, CA 94105

Mailing Address:
Mail Code B30A
P. O. Box 7442
San Francisco, CA 94120

415.973.7145
Fax: 415.973.5520
E-Mail: ARF3@pge.com

September 25, 2013

Via UPS Next Day Air

Ms. Katrina Chow, Project Manager
Bureau of Reclamation – Planning Division
2800 Cottage Way, MP-700
Sacramento, CA 95825-1893

Re: Pacific Gas and Electric Company's Comments on the Draft Environmental Impact Statement for the Shasta Lake Water Resources Investigation

Dear Ms. Chow:

Pursuant to the June 25, 2013 public notice for comments on the United States Department of Interior, Bureau of Reclamation's ("BOR" or "Reclamation") Draft Environmental Impact Statement ("DEIS") for the Shasta Lake Water Resources Investigation ("SLWRI"), Pacific Gas and Electric Company ("PG&E") hereby submits these comments on the DEIS.

PGE5-1 PG&E appreciates the opportunity to submit comments on the DEIS. As discussed herein, PG&E believes there are deficiencies in the DEIS' level of analysis regarding the extent, and the types of impacts, that increasing the height of Shasta Dam, by 18.5 feet (Alternatives CP3, CP4, CP5) will have on PG&E and its customers. Consequently, until BOR updates its

PGE5-2 analyses to correct these deficiencies and comprehensively addresses the full scope of adverse impacts, PG&E opposes increasing the height of Shasta Dam.

BACKGROUND

PGE5-3 PG&E is the owner and holder of the Federal Energy Regulatory Commission ("FERC") License for the McCloud-Pit Project, FERC Project No. 2106 ("McCloud-Pit Project" or "Project"). The Project is located on the McCloud and Pit Rivers. Included in the McCloud-Pit Project is the Pit 7 Development located on the Pit River. It includes the Pit 7 Dam, Reservoir, Powerhouse (containing two generating units with a combined installed capacity of 112 MW), an Afterbay, and an Afterbay Dam. PG&E also has high voltage power line facilities located within the SLWRI area and electric distribution facilities that cross Shasta Lake.

PGE5-4 In a November 30, 2005 letter to the BOR, PG&E provided scoping comments for the SLWRI. (A copy of PG&E's November 30, 2005 letter is attached as Attachment 1.) As PG&E's letter explained, the proposals to raise Shasta Dam, by 18.5 feet, could have serious adverse impacts on the Pit 7 Development, including inundation of the Pit 7 Afterbay Dam, reduction in generation, overtopping and flooding of the Pit 7 Powerhouse deck, alteration of the

PGE5-4 CONTD

hydraulic characteristics of the spillway basin, and increasing the risk of damage to PG&E facilities.

On January 28, 2013, PG&E provided comments on BOR's Draft Feasibility Report for the SLWRI. PG&E again expressed concern that BOR's proposals to raise Shasta Dam would have serious adverse impacts on PG&E and its customers. (A copy of PG&E's January 28, 2013 is attached as Attachment 2.)

COMMENTS

PGE5-5

Although PG&E's November 30, 2005 and January 28, 2013 letters advised BOR that raising the height of Shasta Dam by 18.5 feet could cause significant adverse impacts to the Pit 7 Development, the DEIS did not fully consider those impacts. In fact, the DEIS only briefly discusses two impacts at the Pit 7 Powerhouse:

1. A <5% decrease in Power Plant energy generation; and

PGE5-6

2. The necessity to install a tailwater depression system.

The DEIS further categorized the decrease in Power Plant energy generation as less than significant and provided an optimistic estimate of only $230K to install a tailwater depression system in the powerhouse.

The Engineering Summary also appeared rather optimistic stating:

PGE5-7

1. No modifications to the Main Dam or Afterbay facilities are necessary;
2. The only necessary powerhouse modification is the installation of a tailwater depression system;
3. The turbines would function normally with the new maximum tailwater levels;
4. The existing Powerhouse structure would not require modifications to accommodate any of the proposed tailwater elevations;
5. The draft tube gates are considered adequate; and
6. No modifications are recommended at Pit 7 Afterbay Dam other than routine inspections of steel reinforcement.

PGE5-8 The overall DEIS analysis of potential impacts at the Pit 7 Development is woefully insufficient. BOR did not address the majority of concerns PG&E raised in its November 30, 2005 and January 28, 2013 letters.

PGE5-9 Accordingly, a more comprehensive assessment of all potential impacts is still required.

PGE5-10 In an effort to help the BOR, PG&E contracted with Black & Veatch to prepare a Technical Memorandum entitled *Shasta Dam Raise Impacts on PG&E's Pit 7 Development*. A copy of this Technical Memorandum is attached as Attachment 3. It is PG&E's intention that this document will form the foundation for future dialog between BOR and PG&E seeking resolution to the impacts at the Pit 7 Development.

PGE5-11 As noted above, PG&E has electric distribution facilities located within the BOR SLWRI study area. Preliminary review of the new water mark based on the model produced by PG&E's Geographic Information Systems Group indicates that PG&E will need to relocate fifty-nine distribution transformers and upgrade twenty-nine distribution transformers at an estimated cost of $914,000. These poles are part of the Antler 1101, Stillwater 1101, and Stillwater 1102 12 kV circuits serving small communities such as parts of Lakehead and Mountain Gate. (See Attachment 4 for more detail.)

PGE5-12 PG&E also has two high voltage power line facilities located within the SLWRI study area, the Crag View-Cascade 115 kV line, and the Delta-Mountain Gate Junction 60kV line. The two lines roughly parallel each other within the study area with the 115 kV line the more westerly of the two circuits. In addition, the 115 kV line supports a fiber optic communication cable.

PGE5-13 Approximately twenty-four PG&E structures will be affected by BOR's proposed project and may require replacement. The replacement of the structures that support electrical conductors that span large bodies of water will require significantly taller structures (approximately 40 to 50 feet taller). The taller structures are needed for the following reasons:

1. The increase in span lengths between structures;
2. The raise in the water level; and
3. Since the original construction of the power lines, the State of California clearance requirements over water has increased by an additional 20 feet.

The projected cost to modify the high voltage power lines, due to BOR's proposed project, is approximately $15 million but costs could be significantly higher. PG&E would

PGE5-13 CONTD require a minimum of thirty to forty months to engineer and construct the modifications. (See Attachment 5 for additional details.)

PGE5-14 PG&E noted in its January 28, 2013 comments on BOR's Draft Feasibility Report that BOR needed to comply with its obligations under the National Environmental Policy Act. These obligations include identification and consideration of the potential environmental effects that could result from modifications to PG&E facilities as a result of any BOR decision to raise Shasta Dam.

PGE5-15 In addition, BOR is required to comprehensively examine the alternatives for raising Shasta Dam.

PGE5-16 Therefore, BOR should, in its next level of analyses in the Investigation and associated Final EIS, thoroughly examine all potential impacts on PG&E's operations and facilities.

PGE5-17 As indicated, PG&E is providing BOR with Black & Veatch's Technical Memorandum on the Shasta Dam raise impacts. (See Attachment 3.) Also, Attachments 4 and 5 to these comments provide details regarding the impact to PG&E's distribution and transmission systems. Should BOR have any questions on these materials, PG&E is willing to meet and discuss them with BOR and its representatives.

CONCLUSION

PGE5-18 Until all impacts of the Shasta Dam raise on the Pit 7 Development, the electric transmission and distribution facilities, and hence PG&E and its customers are identified, thoroughly analyzed, and satisfactory mitigation measures are proposed, PG&E continues to oppose raising Shasta Dam.

PG&E looks forward to cooperating with BOR and appreciates the opportunity to comment. If you have any questions or would like to discuss these comments, please contact either Alvin Thoma, Director of Hydro Licensing, at (415) 973-4466 or at ALT5@pge.com, or myself at (415) 973-7145 or at ARF3@pge.com.

Very truly yours,

Alvin L. Thoma
Director – Hydro Licensing

Annette Faraglia
Law Department

Attachments (5)

ATTACHMENT 1

Pacific Gas and Electric Company

Hydro Generation

245 Market Street
San Francisco, CA 94105

Mailing Address
Mail Code N11C
P.O. Box 770000
San Francisco, CA 94177

415.973.5323

November 30, 2005

Ms. Donna C. Garcia, Project Manager
Bureau of Reclamation, MP-700
2800 Cottage Way
Sacramento, CA 95825-1898

Shasta Lake Water Resources Investigation
Scoping Meeting Comments

Dear Ms. Garcia:

This letter provides the scoping comments of Pacific Gas and Electric Company (PG&E or Company) on the Shasta Lake Water Resources Investigation (Investigation). PG&E's representative attended the Scoping Meeting for this Investigation on November 1, 2005, in Fresno. The open house scoping exhibits were very informative and the team members very helpful in explaining the process and answering questions.

PG&E is a public utility engaged in the generation, transmission, and distribution of electric energy and the transmission and distribution of natural gas to its customers in northern and central California. It has a long and proud history of operating hydroelectric generating facilities in the Cascade and Sierra Nevada mountain ranges of California. The Company owns and operates 26 hydroelectric projects (with 65 powerhouses) licensed by the Federal Energy Regulatory Commission (FERC) and three additional hydro facilities that are not under FERC jurisdiction.

PGE5-19

The Investigation includes alternatives that would impact PG&E's McCloud-Pit Project, FERC No. 2106, upstream of Shasta Dam. This project includes 3 powerhouses with a combined capacity of more than 360 megawatts (MW) and combined average annual generation of more than 1,542 megawatt-hours (MWH). The feasibility analysis of additional water storage in Lake Shasta should consider the potential impacts to existing electric generating facilities in the basin and the resulting impacts on the customers, employees, and owners of these facilities.

PG&E has reviewed the Bureau of Reclamation's Overview of Initial Alternatives (August 2004) and Appraisal Assessment of the Potential for Enlarging Shasta Dam and Reservoir (May 1998). Raising Shasta Dam would increase the water surface elevation of Lake Shasta and periodically increase the tailwater elevation for the Pit 7 Powerhouse and reduce that generating unit's maximum capacity and average annual generation.

The five initial alternatives for enlargement of Shasta Dam and Reservoir (by 6.5 feet or 18.5 feet) would cause adverse impacts to PG&E's facilities and operation at the Pit 7 Afterbay Dam and Pit 7 Powerhouse.

ATTACHMENT 1

The proposed alternatives would frequently inundate the Pit 7 Afterbay Dam and force the Pit 7 Powerhouse to frequently operate with a higher tailwater level resulting in less generation of electricity. The FERC license-required gaging station (PH-47) would be inundated for much of every year. Currently, this gage is affected whenever storage in Shasta Lake exceeds 3.8 million acre-feet. This condition can last from one to six months in a year depending on the water conditions. With a raise of Shasta Dam, this condition is likely to last for most of the year.

PGE5-19
CONTD

The 18.5-foot-raise of Shasta Dam would also increase the likelihood of overtopping and flooding the Pit 7 Powerhouse deck. The higher water surface elevation in Lake Shasta would also inundate the Pit 7 Dam spillway flip bucket and affect the hydraulic characteristics of the spillway basin. This would likely result in higher water levels at the powerhouse and associated switchyard during spill conditions and increase the risk of damage to PG&E's facilities.

PG&E understands the need for additional water storage projects in California. It is not opposed to an increase in the storage capacity of Lake Shasta. However, PG&E's customers, shareholders, and employees expect that impacts to our existing facilities from such a project be mitigated and compensated at a value fully commensurate with those impacts. One way of accomplishing this would be for PG&E to own and operate any new hydroelectric facilities built at Shasta Dam that benefit from the increased storage capacity of Lake Shasta.

PG&E appreciates the opportunity to submit scoping comments on the Investigation and looks forward to working cooperatively with the Bureau of Reclamation and California Department of Water Resources in the future. Please call me at (415) 973-5358 or send an email to njm1@pge.com if you have any questions or would like to schedule follow-up technical meetings.

Sincerely,

Nicholas J. Markevich

Nicholas J. Markevich
Senior License Coordinator
Hydro Generation Department
Pacific Gas and Electric Company

ATTACHMENT 2

Pacific Gas and Electric Company

Power Generation

245 Market Street
San Francisco, CA 94105

Mailing Address
Mail Code N11C
P.O. Box 770000
San Francisco, CA 94177

COPY

January 28, 2013

E-Filing
BOR-MPR-SLWRI@USBR.GOV

Ms. Katrina Chow, Project Manager
BUREAU OF RECLAMATION
2800 Cottage Way, MP-270
Sacramento, CA 95825-1893

Re: Pacific Gas and Electric Company's Comments on Draft Feasibility Report for the Shasta Lake Water Resources Investigation

Dear Ms. Chow:

Pursuant to the December 7, 2012 public notice extending the due date for comments on the Bureau of Reclamation's ("BOR" or "Reclamation") Draft Feasibility Report for the Shasta Lake Water Resources Investigation ("Report"), Pacific Gas and Electric Company ("PG&E") hereby submits comments on the Report.

PG&E appreciates the extended opportunity to submit comments on the Report. As discussed herein, PG&E believes there are deficiencies in the Report's level of analysis regarding the impacts that increasing the height of Shasta Dam, by 18.5 feet (CP3, CP4, CP5), will have on PG&E and its customers. Consequently, until BOR updates its analyses to correct these deficiencies and comprehensively addresses the full scope of adverse impacts, PG&E opposes increasing the height of Shasta Dam.

PGE5-20

BACKGROUND

PG&E is the owner and holder of a license issued by the Federal Energy Regulatory Commission ("FERC") for the McCloud-Pit Project, FERC Project No. 2106 ("McCloud-Pit Project"). The Project is located on the McCloud and Pit Rivers. Included in the McCloud-Pit Project is the Pit 7 Development located on the Pit River. It includes the Pit 7 Dam, Reservoir, Powerhouse (containing two generating units with a combined installed capacity of 112 MW), an Afterbay, and an Afterbay Dam.

In a November 30, 2005 letter to the BOR (copy attached), PG&E provided scoping comments for the Shasta Dam Water Resources Investigation. As PG&E's letter explained, the proposals to raise Shasta Dam, by 18.5 feet, could have serious adverse impacts on the Pit 7 Development, including inundation of the Pit 7 Afterbay Dam, reduction in generation, overtopping and flooding of the Pit 7 Powerhouse deck, alteration of the hydraulic characteristics of the spillway basin, and increasing the risk of damage to PG&E facilities.

ATTACHMENT 2

COMMENTS

Although PG&E's November 30, 2005 letter advised BOR that raising the height of Shasta Dam by 18.5 feet could cause significant adverse impacts to the Pit 7 Development, the BOR's Report did not fully consider those impacts. It appears the Report only acknowledges that raising Shasta Dam would cause water to back up onto the downstream flip bucket lip and powerhouse wall at the Pit 7 Powerhouse. The Report asserts that this could be addressed by developing operating procedures for Shasta Dam to keep full pool elevations below a certain level during specific periods. (*See* p. 5-4 of the Report.) PG&E is not convinced that operating procedures alone will mitigate this impact. Higher tailwater on the flip bucket will alter the hydraulic characteristics and performance of the spill channel design. Noting that spillway use may be required at any time due to unplanned events, this is a facility safety issue that must be thoroughly analyzed by experts and may ultimately require extensive spillway modifications.

PGE5-20 CONTD

The Report also states that the increased tailwater elevation caused by raising Shasta Dam would require the installation of a tailwater depression system to lower the water in the draft tubes before the units could be switched to synchronous mode. (*Id.* and Table 3-9) While a tailwater depression system may be necessary, the installation of such a system may require other major upgrades not mentioned in the Report such as new wicket gates and/or turbine runner seals. Furthermore, the amount of additional submergence for the current turbine runner design may not be practical. It may be necessary to install re-designed turbine runners to accommodate the additional submergence. These issues must also be thoroughly analyzed by experts and may ultimately require extensive turbine modifications.

The Report overlooks other potential impacts such as, but not limited to, the potential of flood to the interior of the Powerhouse through discharge piping from the building sump pumps, draft tube de-watering pumps, and equipment cooling water systems. The proposed 18.5 foot raise places the Shasta Lake maximum elevation above the level of all three interior Powerhouse floors. Attached as a separate PDF is a *confidential* CEII drawing which provides in more detail impacts to the Powerhouse. PG&E requests that BOR keep this drawing *confidential*.

Clearly, the overall analysis of potential impacts at the Pit 7 Development included in the Report is woefully insufficient and more comprehensive assessments of *all* potential impacts are warranted.

According to Table 3-15 of the Report, the construction and annual costs of modifications to the Pit 7 Development would be $200,000. This estimate is based on an insufficient analysis, and PG&E expects significantly higher costs. Cost estimates cannot be even modestly accurate

PGE5-20
CONTD

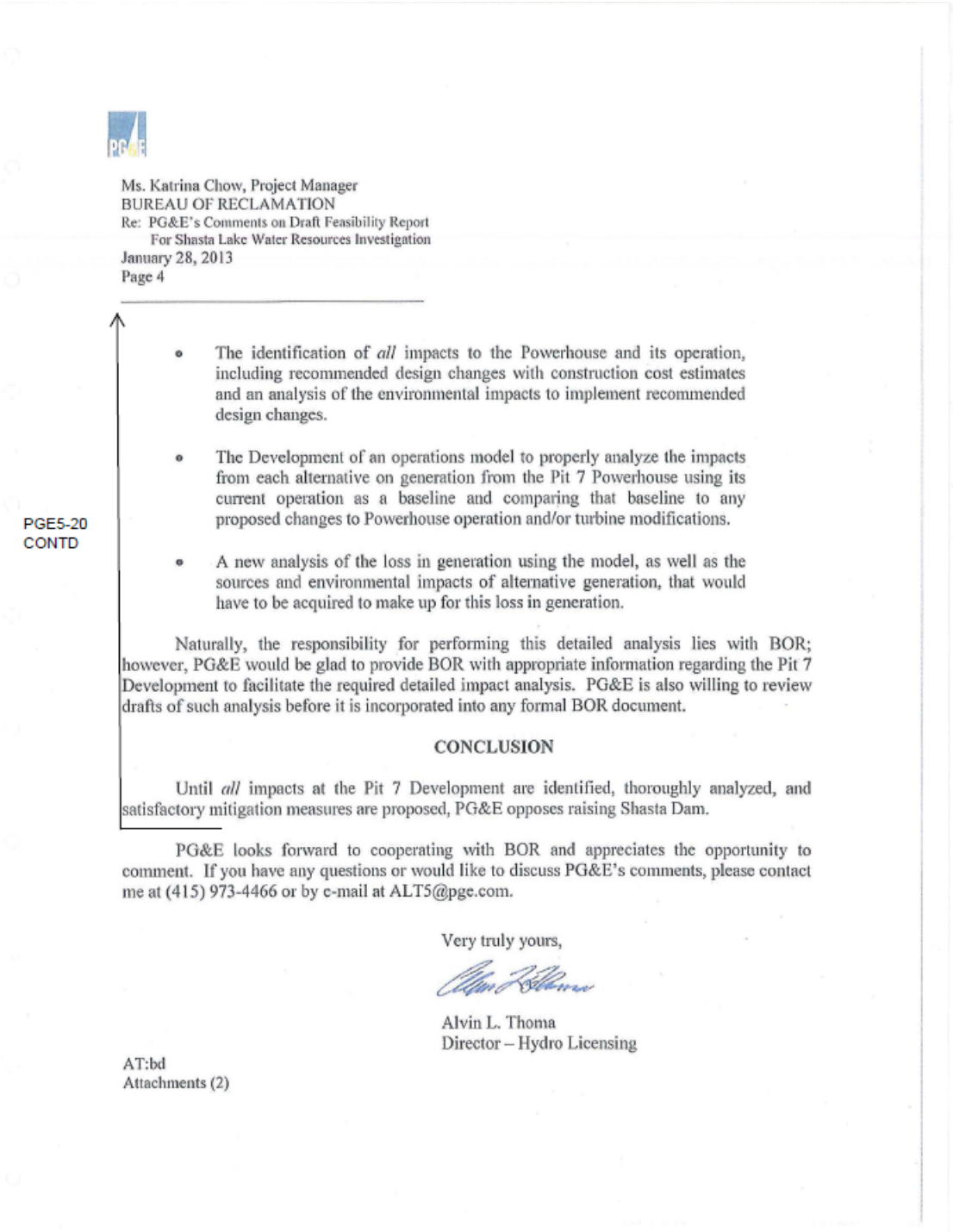
until all impacts are analyzed and Powerhouse and Dam modifications are developed and recommended. The range of possibilities varies from very few modifications to a complete re-design of the Powerhouse and possibly including the spillway and channel.

In association with its review of the Report, PG&E reviewed the Preliminary Draft Environmental Impact Statement ("DEIS") prepared in association with the Investigation. The DEIS also discusses the tailwater depression system. (DEIS at p. 2-31 and Table 2-8) However, the DEIS notes that the increase in tailwater elevation at the Pit 7 Powerhouse, caused by the increase in Shasta Dam, would cause losses in generation. Such losses would be considered significant if the monthly average generation was reduced by more than 5% in any month, and that losses exceeded the 5% amount for numerous months under all of the alternatives for an 18.5 feet raise of Shasta Dam (the alternative for a 12.5 feet raise). (*See* DEIS at pp. 23-8 to 23-11 and 23-27 to 23-56.) The DEIS confirms in Table 23-42 that these decreases in net generation were potentially significant. Finally, the DEIS concludes that these decreases in net generation constitute an unavoidable environmental impact that cannot be mitigated. (DEIS at pp. 26-1 to 26-2) For analysis of impacts on generation from the Pit 7 Powerhouse, BOR used a spreadsheet post-processor in lieu of a model. (DEIS at pp. 23.8 to 23.9) To properly analyze impacts on generation, a model should be developed of the current Pit 7 Powerhouse operation and be used as a baseline to compare with any proposed changes to Powerhouse operation and/or turbine modifications.

PG&E appreciates that the Shasta Dam Water Resources Investigation is still ongoing and that the Report acknowledges (at p. 5-4) that other effects to the Pit 7 Development will have to be considered and addressed. However, given PG&E's November 30, 2005 letter, PG&E had hoped for a more thorough analysis of the potential impacts on the Pit 7 Development.

PG&E notes that to comply with its obligations under the National Environmental Policy Act ("NEPA"), BOR is required to comprehensively examine the alternatives for raising Shasta Dam. Therefore, BOR should, in its next level of analyses in the Investigation and associated NEPA document, thoroughly examine all potential impacts on operations and facilities at PG&E's Pit 7 Development. These include:

- The impacts of higher tailwater to facility safety for the entire Pit 7 Development, including impacts to and the performance of the spill channel. Such an analysis must include recommended design changes with construction cost estimates and an analysis of the environmental impacts to implement recommended design changes.



Ms. Katrina Chow, Project Manager
BUREAU OF RECLAMATION
Re: PG&E's Comments on Draft Feasibility Report
For Shasta Lake Water Resources Investigation
January 28, 2013
Page 4

- The identification of *all* impacts to the Powerhouse and its operation, including recommended design changes with construction cost estimates and an analysis of the environmental impacts to implement recommended design changes.

- The Development of an operations model to properly analyze the impacts from each alternative on generation from the Pit 7 Powerhouse using its current operation as a baseline and comparing that baseline to any proposed changes to Powerhouse operation and/or turbine modifications.

- A new analysis of the loss in generation using the model, as well as the sources and environmental impacts of alternative generation, that would have to be acquired to make up for this loss in generation.

PGE5-20
CONTD

Naturally, the responsibility for performing this detailed analysis lies with BOR; however, PG&E would be glad to provide BOR with appropriate information regarding the Pit 7 Development to facilitate the required detailed impact analysis. PG&E is also willing to review drafts of such analysis before it is incorporated into any formal BOR document.

CONCLUSION

Until *all* impacts at the Pit 7 Development are identified, thoroughly analyzed, and satisfactory mitigation measures are proposed, PG&E opposes raising Shasta Dam.

PG&E looks forward to cooperating with BOR and appreciates the opportunity to comment. If you have any questions or would like to discuss PG&E's comments, please contact me at (415) 973-4466 or by e-mail at ALT5@pge.com.

Very truly yours,

Alvin L. Thoma
Director – Hydro Licensing

AT:bd
Attachments (2)

Responses to Comments from Pacific Gas & Electric Company

PGE5-1: During the public comment period for the SLWRI, PG&E provided comments regarding their facilities that are operated on the Pit River, and transmission facilities within the primary study area. Some of the concerns were the reduced generation capacity of hydropower facilities on the Pit River due to higher tailwater levels, and operational effects of the current Pit 7 Dam spillway and afterbay dam. PG&E also

raised concern of the proposed modifications to two of transmission facilities in the area.

During development of the D EIS, Reclamation coordinated with PG&E to obtain information needed to conduct analyses on the effects on PG&E facilities, and the potential reduction in long term generation of power. The information provided by PG&E to Reclamation was used in the development of both designs and cost estimates that were developed for the DEIS. All analysis of PG&E facilities for the DEIS was the best available to Reclamation at the time of development. During the public comment period PG&E expressed concern regarding the analysis that was done regarding the Pit 7 facility, transmission and distribution lines, and long term power generation. During this time PG&E provided Reclamation with additional information to improve the level of analysis of these facilities. Based on this additional information, Reclamation has refined their analyses related to PG&E facilities in the Final EIS, including:

- Modifications to the Pit 7 Dam spillway have been incorporated into all action alternatives (see Chapter 2, "Alternatives," Section 2.3.8, "Comprehensive Plan Construction Activities.")

- Modifications to Pit 7 Powerhouse have been refined in all action alternatives (see Chapter 2, "Alternatives," Section 2.3.8, "Comprehensive Plan Construction Activities.")

- To offset reduced power generation capabilities at Pit 7 Powerhouse due to increased tailwater effects of an enlarged Shasta Lake, all action alternatives include in-kind power replacement (see Chapter 2, "Alternatives," Section 2.3, "Action Alternatives.")

The following features have been updated in the cost estimates to reflect the refinements to the Pit 7 Powerhouse Mechanical Modifications, additional dewatering pumping capacity at gallery, extend dam erosion protection, stabilize flooded roadway section with concrete paving, relocate gaging station and cableway, extend boat barriers, rehab existing boat ramp, relocate security fence, relocate miscellaneous signage, relocate early warning system, and increase height of the existing left and right concrete training walls.

Pit 7 Dam and Powerhouse With the additional information provided during the public comment period for the DEIS about Pit 7 facilities, additional analysis has been performed and information is included in the Final EIS Engineering Summary Appendix, Chapter 3, "Design Considerations for Dam and Appurtenances of Dam Enlargements." The additional analysis required additional items to be added to the cost

estimate for Pit 7 and can be found in the Final EIS Engineering Summary Appendix Attachment 2, "6.5-Foot Raise and Reservoir Area Infrastructure Costs," Attachment 3, "12.5-Foot Raise and Reservoir Area Infrastructure Cost Estimates," and Attachment 4, "18.5-Foot Raise and Reservoir Area Infrastructure Cost Estimates." The cost estimates in the DEIS and in the Final EIS have been developed consistent with Reclamation Manual, Directives and Standards FAC 09-01, 09-02, and 09-03, and if Congress authorizes the project more detailed cost estimates at a more significant level of design will be developed.

Transmission Lines With the additional information provided during the public comment regarding design standards and constraints on the transmission line relocations, designs were updated for the EIS. A description of the transmission line work can be found in the EIS Engineering Summary Appendix, Chapter 4, "Design Considerations for Reservoir Area Infrastructure Modifications and/or Relocations." The cost estimate for the new transmission line relocations can be found in the EIS Engineering Summary Appendix Attachment 2, "6.5-Foot Raise and Reservoir Area Infrastructure Costs," Attachment 3, "12.5-Foot Raise and Reservoir Area Infrastructure Cost Estimates," and Attachment 4, "18.5-Foot Raise and Reservoir Area Infrastructure Cost Estimates." The cost estimates in the DEIS and Final EIS have been developed consistent with Reclamation Manual, Directives and Standards FAC 09-01, 09-02, and 09-03, and if Congress authorizes the project more detailed cost estimates at a more significant level of design will be developed.

Effects to Long Term Generation at Pit 7 Powerhouse Analysis within the DEIS was performed by Reclamation with the best available information at the time of preparation. As stated in the DEIS Chapter 23 "Power and Energy," Section 23.3.2, "Criteria for Determining Significance of Effects":

> *The thresholds of significance for impacts to power and energy are based on the environmental checklist in Appendix G of the State CEQA Guidelines, as amended. These thresholds also encompass the factors taken into account under NEPA to determine the significance of an action in terms of its context and the intensity of its impacts. An alternative would be considered to have a potentially significant impact on regional hydropower production if the average annual energy generation or consumption is greater than 5 percent.*

With the information and tools available to Reclamation at the time of development of the DEIS the impacts were considered less than

significant. The results of the hydropower generation analysis can be found in Table 23-2 through Table 23-8 for the No-Action Alternative, CP1, CP2, CP3, CP4, CP4A, and CP5, respectively.

While under the significance criteria the impact is not significant, Reclamation recognizes that the loss of power generation will result in a loss of PG&E revenue. Reclamation will provide in kind power in a method that will be determined after congressional authorization, to offset the reduced generation at Pit 7 dam and facilities. Chapter 2, "Alternatives," has been revised to reflect Reclamation providing in kind power. Further, Chapter 23, "Power and Energy," has been revised to reflect Reclamations commitment to providing in kind power.

Future Coordination with PG&E Reclamation recognizes that if Congress authorizes the SLWRI that additional planning, engineering analysis, design and cost estimates will need to be performed before construction. Reclamation in coordination with PG&E will discuss and investigate the affects and analysis that will be required for the Pit 7 facilities and other PG&E facilities. Some of the suggested study topics and possible requirements are included in the following Table 33.10-2.

Table 33.10-2. Shasta Dam Raise Impacts on PG&E Pit 7 Development

Impact of Raise	Action Required
Regulatory and Non-Regulatory Documents	
License Amendment FERC Project Boundary/Document Updates PG&E Internal Document Updates	Prepare license amendment, flood plain study, survey maps, and legal recording, update documents
Pit 7 Dam	
Spillway flip bucket overspray and inundation	Physical modeling study
Uplift and additional load on dam	High hazard stability analysis to Shasta PMF water levels
Dam foundation seepage drain system	Redesign pump system at gallery
Two 96 inch low level outlets flooded at Shasta IDF levels	Study to verify no capacity reductions
Diversion tunnel flooding	Geotechnical study on left abutment slope stability
Right abutment groin drainage	Study impact of higher water on existing dam leakage
Spillway channel bank erosion protection	Slope stability and re-design of bank erosion protection

Table 33.10-2. Shasta Dam Raise Impacts on PG&E Pit 7 Development (contd.)

Impact of Raise	Action Required
Pit 7 Powerhouse	
Mechanical	
Tailwater depression system	Study to determine is a depression system will be required, design water depression system, and add compressors, receivers and controls
Governor pressure tanks and air receiver	Secure against buoyancy
Turbine shaft seals	Seal study and test with higher TW.
Turbine Modifications - Loss of efficiency, adverse change in rough operating zone and increased vibration	Study and/or test these impacts
Flood interior of powerhouse	Study measures to reduce risk
Electrical equipment associated with mechanical equipment relocation	Study measures to reduce risk of shorting out electrical equipment on turbine floor due to flooding
Building sump pumps, cooling water, draft tube de-watering pumps	Study pump H/Q curves for higher TW
Oil separators	Study for sizing
Spiral case access with higher TW	No technical solution available
Electrical	
Electrical equipment relocation	1) All electrical equipment on turbine floor (elev. 1069.0') and basement floor (Elev. 1056.75') will be under water. They should be relocated above the proposed normal tailwater Elev. 1087.5'. 2) The lower portion of electrical equipment including components installed on the switchboard and panels mounted on the generator floor (1084.5') will be under water. They should be relocated above the proposed normal tailwater Elev. 1087.5'
Automation system upgrade	1) All rack mounted devices below proposed normal tailwater Elev. 1087.5' need to be relocated. 2) Add floor monitoring alarm systems
Civil	
Powerhouse building stability	Structural analysis for sliding and uplift
Powerhouse building structural adequacy	Analyze powerhouse walls and other structural member for new differential head load cases
New construction and anchors verification for equipment	Design and structural verification for flooded powerhouse loads
Draft tube stop log gates	Structural analysis, hoisting system, and gate seal verification
Powerhouse and road surface drainage system discharging into diversion tunnel outlet	Study powerhouse and road surface drain system
Powerhouse walls and dewatering capacity system	Condition assessment for leakage due to higher TW
Septic tank floatation	Verify stability and efficacy of tank
Operation	
Loss of Generation Shasta IDF and PMF levels impacts on operation	Study based on proposed reservoir elevations and current PG&E operation

Table 33.10-2. Shasta Dam Raise Impacts on PG&E Pit 7 Development (contd.)

Impact of Raise	Action Required
PIT 7 Afterbay Dam	
Civil Works	
Hydrostatic loads on the Pit 7 Afterbay Dam (rapid drawdown)	Rock dam structural stability (significant hazard)
Uplift on weir structure	Stability analysis
Pit 7 Afterbay Dam abutment erosion protection	Design to extend dam erosion protection to new water surface elevation
Reservoir	
Slope stability of river banks for 20.5 feet higher inundation area	Geotechnical investigation
Self-flushing capacity of reservoir	Sediment passage study
Afterbay, Fender's Ferry Camp, and PH-47 Gaging Station Access Road, and PH-47 Gaging Station and cableway	Re-design to meet USGS requirements for higher water level
Public Safety	
Public access conflicts with the current location of the Pit 7 Afterbay Dam for higher water levels	Evaluate Pit 7 Afterbay Dam potential relocation upstream to meet USFS requirements
Boat barrier	Re-design
Boat ramp relocation as a result of the higher water levels	Re-design to meet USFS requirements and upgrade public safety plan
Dam boat barrier cable and signage	Re-design and upgrade to meet USFS requirements
Security fence relocation	Flood plain study , re-design layout, and update public safety plan
Fender's Ferry Camp relocation	Re-design, flood plain study, and public safety plan to meet USFS requirements
Signage relocation	Re-design signage plan, update public safety plan
Warning siren system	Relocate system and update public safety plan

Key:
Elev. = elevation
FERC = Federal Energy Regulatory Commission
IDF = Inflow design flood
PG&E = Pacific Gas and Electric Company
PMF = probable maximum flood
TW = Tailwater
USFS = U.S. Forest Service
USGS =U.S. Geological Survey

If a project is authorized for construction, Reclamation will coordinate with PG&E to identify the specific studies, and additional analysis will be performed. In addition, Reclamation will work with PG&E to development long-term agreements for power replacement to offset effects to Pit 7 generation during high water levels in the expanded reservoir.

PGE5-2: Please refer to Master Comment Response GEN-5, “Some People Support Dam Raise and Others Oppose Dam Raise.”

PGE5-3: As described in the Engineering Summary Appendix Reclamation recognizes the facilities mentioned in the public comment as being in the primary study area and owned and operated by PG&E.

PGE5-4: Following receipt of PG&E's November 30, 2005 letter Reclamation coordinated with PG&E to obtain information on PG&E facilities. This information, although limited, was the basis for the analysis and evaluations presented in the DEIS. Following the DEIS Reclamation has coordinated with PG&E to obtain additional facility information. See also response to PGE5-1.

PGE5-5: See response to PGE5-1. Based on additional information provided by PG&E following the DEIS comment period, Reclamation has performed additional analysis on PG&E facilities within the primary study area. Based on additional analysis and coordination with PG&E, the Final EIS has been updated to reflect the commitment to provide in kind power to offset reduced power generation at Pit 7 Powerhouse due to impacts of action alternatives.

PGE5-6: See response to PGE5-1. Based on additional information provided by PG&E following the DEIS comment period, Reclamation has performed additional analysis on PG&E facilities within the primary study area. Based on additional analysis and coordination with PG&E, the Final EIS has been updated to reflect the refinements to tailwater depression analysis, designs, and cost estimates.

PGE5-7: See response to PGE5-1. Based on additional information provided by PG&E following the DEIS comment period, Reclamation has performed additional analysis on PG&E facilities within the primary study area. Based on additional analysis and coordination with PG&E, the Final EIS has been updated to reflect the refinements to the Pit 7 Powerhouse Mechanical Modifications, additional dewatering pumping capacity at gallery, extend dam erosion protection, stabilize flooded roadway section with concrete paving, relocate gaging station and cableway, extend boat barriers, rehab existing boat ramp, relocate security fence, relocate miscellaneous signage, relocate early warning system, and increase height of the existing left and right concrete training walls.

PGE5-8: Following receipt of PG&E's November 30, 2005 letter, Reclamation coordinated with PG&E to obtain information on PG&E facilities. This information, although limited, was the basis for the analysis and evaluations presented in the DEIS. Following the DEIS Reclamation has coordinated with PG&E to obtain additional facility information. The Engineering Summary Appendix Chapter 3 "Design Considerations for Dam and Appurtenances of Dam Enlargement," has been updated to include additional analysis performed on PG&E

facilities using additional information provided to Reclamation from PG&E. See also response to PGE5-1.

PGE5-9: Based on additional information provided by PG&E following the DEIS comment period, Reclamation has performed additional analysis on PG&E facilities within the primary study area. Based on additional analysis and coordination with PG&E, the Final EIS has been updated to reflect the refinements to the Pit 7 Powerhouse Mechanical Modifications, additional dewatering pumping capacity at gallery, extend dam erosion protection, stabilize flooded roadway section with concrete paving, relocate gaging station and cableway, extend boat barriers, rehab existing boat ramp, relocate security fence, relocate miscellaneous signage, relocate early warning system, and increase height of the existing left and right concrete training walls. The Engineering Summary Appendix, Chapter 3, "Design Considerations for Dam and Appurtenances of Dam Enlargement," has been updated to include additional analysis performed on PG&E facilities using additional information provided to Reclamation. See also response to PGE5-1.

PGE5-10: Reclamation coordinated with PG&E on December 5, 2013 to review PG&E's comments including Attachment 3 referred to in the above comment. Based on additional information provided by PG&E following the DEIS comment period, Reclamation has performed additional analysis on PG&E facilities within the primary study area. Based on additional analysis and coordination with PG&E, the Final EIS has been updated to reflect the refinements to the Pit 7 Powerhouse Mechanical Modifications, additional dewatering pumping capacity at gallery, extend dam erosion protection, stabilize flooded roadway section with concrete paving, relocate gaging station and cableway, extend boat barriers, rehab existing boat ramp, relocate security fence, relocate miscellaneous signage, relocate early warning system, and increase height of the existing left and right concrete training walls.

Per PG&E's email from John Klobas dated April 8, 2014, PG&E requested that specific information included in their comment letters not be released to the public for security reasons:

> *The documents PG&E provided to Reclamation during the comment period for the SLWRI do indeed contain FERC designated Critical Energy Infrastructure Information (CEII) and other sensitive and confidential information that should <u>not</u> be released to the public for security reasons. Below is a listing of additional instructions for these documents:*

- *Do not release the CEII drawing in Attachment 1. It is okay to release the remainder of Attachment 1.*
- *It is okay to release the entire Attachment 2.*
- *Do not release Attachment 3. (CEII is included throughout the Pit 7 B&V Report)*
- *Do not release Attachment 4. (Sensitive information about the distribution and communication lines w/maps)*
- *Do not release Attachment 5. (Sensitive information about the transmission lines)*

PGE5-11: During development of the DEIS Reclamation developed estimates of the lengths of affected power distribution lines, as described in the Engineering Summary Appendix.

Based on the best available information for newly inundated areas and required reservoir area structure relocations, up to 30,000 linear feet of low voltage power linear feet were identified for replacement. As identified in Chapter 2, "Alternatives," Section 2.3.8, "Comprehensive Plan Construction Activities," Reclamation commits to relocate all facilities affected by inundation or other relocations, and will perform further analysis after congressional authorization.

PGE5-12: Based on additional information provided by PG&E following the DEIS comment period, Reclamation has performed additional analysis on PG&E facilities within the primary study area. The Engineering Summary Appendix Chapter 4 "Design Considerations for Reservoir Area Infrastructure Modifications and/or Relocations," has been updated to include additional analysis performed on PG&E's transmission lines in the primary study area to accommodate a change in clearance standards. Please see response to PGE5-1.

PGE5-13: Based on additional information provided by PG&E following the DEIS comment period, Reclamation has performed additional analysis on PG&E facilities within the primary study area. The Engineering Summary Appendix Chapter 4 "Design Considerations for Reservoir Area Infrastructure Modifications and/or Relocations," has been updated to include additional analysis performed on PG&E's transmission lines in the primary study area to accommodate a change in clearance standards. Please see response to PGE5-1.

PGE5-14: Please refer to Master Comment Response EI-1, "Intent of NEPA Process is to Provide Fair and Full Discussion of Significant Environmental Impacts."

PGE5-15: Please refer to Master Comment Response P&N-1, "Purpose and Need and Objectives," Master Comment Response ALTR-1, "Range of Alternatives – General," and Master Comment Response ALTS-1, "Alternative Selection."

PGE5-16: Based on additional information provided by PG&E following the DEIS comment period, Reclamation has performed additional analysis on PG&E facilities within the primary study area. Based on additional analysis and coordination with PG&E, the Final EIS has been updated to reflect the refinements to the Pit 7 Powerhouse Mechanical Modifications, additional dewatering pumping capacity at gallery, extend dam erosion protection, stabilize flooded roadway section with concrete paving, relocate gaging station and cableway, extend boat barriers, rehab existing boat ramp, relocate security fence, relocate miscellaneous signage, relocate early warning system, and increase height of the existing left and right concrete training walls. The Engineering Summary Appendix, Chapter 3, "Design Considerations for Dam and Appurtenances of Dam Enlargement," has been updated to include additional analysis performed on PG&E facilities using additional information provided to Reclamation. See also response to PGE5-1.

PGE5-17: Reclamation coordinated with PG&E on December 5, 2013 to review PG&E's comments including multiple attachments referred to in the above comment. Based on additional information provided by PG&E following the DEIS comment period, Reclamation has performed additional analysis on PG&E facilities within the primary study area. Based on additional analysis and coordination with PG&E, the Final EIS has been updated to reflect the refinements to the Pit 7 Powerhouse Mechanical Modifications, additional dewatering pumping capacity at gallery, extend dam erosion protection, stabilize flooded roadway section with concrete paving, relocate gaging station and cableway, extend boat barriers, rehab existing boat ramp, relocate security fence, relocate miscellaneous signage, relocate early warning system, and increase height of the existing left and right concrete training walls.

Per PG&E's email from John Klobas dated April 8, 2014, PG&E requested that specific information included in their comment letters not be released to the public for security reasons:

> *The documents PG&E provided to Reclamation during the comment period for the SLWRI do indeed contain FERC designated Critical Energy Infrastructure Information*

(CEII) and other sensitive and confidential information that should not be released to the public for security reasons. Below is a listing of additional instructions for these documents:

- *Do not release the CEII drawing in Attachment 1. It is okay to release the remainder of Attachment 1.*
- *It is okay to release the entire Attachment 2.*
- *Do not release Attachment 3. (CEII is included throughout the Pit 7 B&V Report)*
- *Do not release Attachment 4. (Sensitive information about the distribution and communication lines w/maps)*
- *Do not release Attachment 5. (Sensitive information about the transmission lines)*

PGE5-18: Please refer to Master Comment Response GEN-5, "Some People Support Dam Raise and Others Oppose Dam Raise."

PGE5-19: This comment appears to referencing scoping meetings performed for the SLWRI, and not the DEIS which is the subject of these responses. However, following receipt of PG&E's November 30, 2005 letter, Reclamation coordinated with PG&E to obtain information on PG&E facilities. This information, although limited, was the basis for the analysis and evaluations presented in the DEIS. Following the DEIS Reclamation has coordinated with PG&E to obtain additional facility information. See also response to PGE5-1.

PGE5-20: This comment appears to referencing the Draft Feasibility Report for the SLWRI, and not the DEIS which is the subject of these responses. Please also see response to PGE5-1.

33.10.36 Pacific Gas & Electric Company

PGE6

From: **Diamond, Elizabeth** <EJDd@pge.com>
Date: Thu, Sep 26, 2013 at 5:06 PM
Subject: Typo Error in PG&E's Comments to re BOR's DEIS on Shasta Lake Water Resources Investigation . . .
To: "kchow@usbr.gov" <kchow@usbr.gov>
Cc: "Faraglia, Annette (Law)" <ARF3@pge.com>

Sept. 26, 2013

Ms. Chow:

I made a typographical error in PG&E's September 25, 2013 Comments. On **page 3**, in the **third paragraph**, the **3 & 4th lines down**, "fifty-nine distribution transformers" should read "**fifty-nine distribution poles**. It should read as follows:

PGE6-1

As noted above, PG&E has electric distribution facilities located within the BOR SLWRI study area. Preliminary review of the new water mark based on the model produced by PG&E's Geographic Information Systems Group indicates that PG&E will need to relocate fifty-nine distribution poles ~~transformers~~ and upgrade twenty-nine distribution transformers at an estimated cost of $914,000. These poles are part of the Antler 1101, Stillwater 1101, and Stillwater 1102 12 kV circuits serving small communities such as parts of Lakehead and Mountain Gate. (See Attachment 4 for more detail.)

I have attached a corrected page 3 to PG&E's Comments.

Would BOR like an electronic copy of the complete copy of the Comments with the corrected page or would BOR prefer to insert the page?

I apologize for my inadvertent error.

Thank you!
Betsie Diamond
PG&E Law Dept.
77 Beale St., B30A-2482
San Francisco, CA 94105-1814
Telephone: (415) 973-6644
Facsimile: (415) 972-5952
E-Mail: ejdd@pge.com

The overall DEIS analysis of potential impacts at the Pit 7 Development is woefully insufficient. BOR did not address the majority of concerns PG&E raised in its November 30, 2005 and January 28, 2013 letters. Accordingly, a more comprehensive assessment of all potential impacts is still required.

In an effort to help the BOR, PG&E contracted with Black & Veatch to prepare a Technical Memorandum entitled *Shasta Dam Raise Impacts on PG&E's Pit 7 Development*. A copy of this Technical Memorandum is attached as Attachment 3. It is PG&E's intention that this document will form the foundation for future dialog between BOR and PG&E seeking resolution to the impacts at the Pit 7 Development.

As noted above, PG&E has electric distribution facilities located within the BOR SLWRI study area. Preliminary review of the new water mark based on the model produced by PG&E's Geographic Information Systems Group indicates that PG&E will need to relocate fifty-nine distribution poles and upgrade twenty-nine distribution transformers at an estimated cost of $914,000. These poles are part of the Antler 1101, Stillwater 1101, and Stillwater 1102 12 kV circuits serving small communities such as parts of Lakehead and Mountain Gate. (See Attachment 4 for more detail.)

PG&E also has two high voltage power line facilities located within the SLWRI study area, the Crag View-Cascade 115 kV line, and the Delta-Mountain Gate Junction 60kV line. The two lines roughly parallel each other within the study area with the 115 kV line the more westerly of the two circuits. In addition, the 115 kV line supports a fiber optic communication cable.

Approximately twenty-four PG&E structures will be affected by BOR's proposed project and may require replacement. The replacement of the structures that support electrical conductors that span large bodies of water will require significantly taller structures (approximately 40 to 50 feet taller). The taller structures are needed for the following reasons:

1. The increase in span lengths between structures;
2. The raise in the water level; and
3. Since the original construction of the power lines, the State of California clearance requirements over water has increased by an additional 20 feet.

The projected cost to modify the high voltage power lines, due to BOR's proposed project, is approximately $15 million but costs could be significantly higher. PG&E would

Responses to Comments from Pacific Gas & Electric Company

PGE6-1: Reclamation recognizes the changes made to PG&E's comment letter sent on September 25, 2013. Please see response PGE5-11.

33.10.37 Porgans & Associates

PORG

Fwd: Brief Statement in Support of Comments

KATRINA CHOW <kchow@usbr.gov> Wed, Oct 23, 2013 at 1:14 PM
To: KATHLEEN DUNCAN <kduncan@usbr.gov>

Sent from my iPhone

Begin forwarded message:

From: Pedro Lucero <plucero@usbr.gov>
Date: September 30, 2013, 11:45:06 PM PDT
To: KATRINA CHOW <kchow@usbr.gov>
Subject: Fwd: Brief Statement in Support of Comments

Pete Lucero
PAO

Sent from my iPhone.

Begin forwarded message:

From: Patrick Porgans <porgansinc@sbcglobal.net>
Date: September 30, 2013, 11:23:56 PM PDT
To: <plucero@usbr.gov>
Cc: <pp@planetarysolutionries.org>
Subject: Brief Statement in Support of Comments

To: Pete Lucero, PIO, BOR Sacramento

As stated previously, Porgans & Associates (P/A) made several attempts before 5:00 p.m. to email comments to the PIO, expressing support of the Winnemen Wintu Tribal concerns for their "Sacred Sites", and, for that reason alone, P/A has reservations about the proposal to raise Shasta Dam.

PORG-1 P/A respectfully suggest that the Bureau, via the Department of Interior restore, develop a plan to restore :Sacred sites"; not destroy them. I distinctly recall having had the "raise the dam experience" on one or two other occasions in the past 30 years.

PORG-2 P/A intimate knowledge of the adverse impacts attributable to the "operation" of the federal Central Valley Project (CVP), primarily to salmonid and other threatened and/or endangered species, is a real threat that has yet to be mitigated.

PORG-3 P/A would not object to a water project that could pay-for-itself; identify the availability of water to be developed; demonstrate a legitimate need for the proposed project, and fully mitigate the impacts associated with the action.

PORG-4 Lastly, P/A represents Planetary Solutionaries and its policy and position are to stop CVP water contract renewal until the Bureau makes good for the protections that have yet to be forthcoming. Before the Bureau does any additional water development it should complete the following tasks:

PORG-5 1). Fully comply with the terms and conditions of their water right permits and licenses, issued by and under the jurisdiction of the California State Water Resources Control Board;

PORG-6 2). Adhere to Board Adopted Water Quality Control Plans

PORG-7 3). Provide cost-effective and proven solutions to CVP drainage problem and cease water deliveries to lands that are discharging toxic drainage into the Delta.

PORG-8 4).Too be compliant with the provision contained in Board D-1631 dealing with drainage and water rights;

PORG-9 5). Achieve mandated fish-doubling populations;

PORG-10 6). Retire all lands within the San Luis Unit that have known toxic drainage problems, and

PORG-11 7). Permanently reduce water deliveries to those lands and

PORG-11 CONTD

dedicated it for the protection of Delta water users and uses.

PORG-12

Time and my pre-occupation with other matters of state, limit P/As ability to give the "dam" proposal the time and attention it deserves; albeit, for the record, please confirm receipt of P/As comments.

Respectully,

Patrick Porgans, Solutionist

Responses to Comments from Porgans & Associates

PORG-1: Please refer to Master Comment Response CR-1, "Potential Effects to Cultural Resources," Master Comment Response CR-3, "Current Effects to Cultural Resources," and Master Comment Response CR-15, "National Historic Preservation Act Section 106 Consultations."

PORG-2: Please refer to Master Comment Response DSFISH-6, "Historic Dam Effects on Fisheries."

PORG-3: Please refer to Master Comment Response GEN-1, "Comment Included as Part of the Record."

PORG-4: Comment noted.

PORG-5: Reclamation operates the Central Valley Project in compliance with all applicable state and federal statutes and regulations.

Please refer to Master Comment Response WR-1, "Water Rights."

PORG-6: Reclamation operates the Central Valley Project in compliance with all applicable state and federal statutes and regulations.

PORG-7: Central Valley agricultural drainage problems are outside the scope of the SLWRI and are being addressed by Reclamation and other stakeholders under separate programs from the SLWRI. Examples of these programs/initiatives include the San Luis Drainage Reevaluation Program, Grassland Bypass Project, and the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS).

Please refer to Master Comment Response GEN-7, "Rules and Regulations for Water Operations under Action Alternatives."

PORG-8: It is unclear what connection the commenter is making between D-1631 and Reclamation or its water systems. Water Rights Decision D-1631 is related to diversion of water from the Mono Basin by the City of Los Angeles under the City's water right. Diversions referenced in D-1631 from Mono County's Lee Vining, Walker, Parker, and Rush creeks are not through CVP and SWP facilities, or any other facilities owned or operated by Reclamation, and the CVP and SWP do not divert water from the Mono Basin.

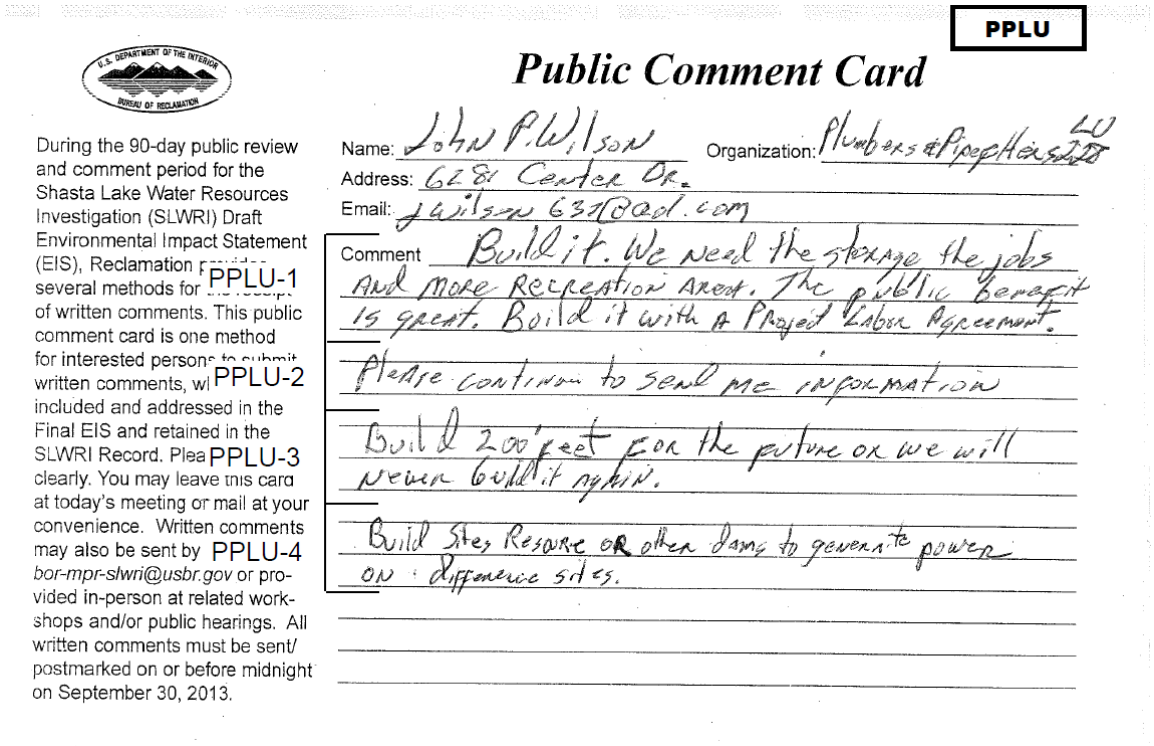
PORG-9: Please refer to Master Comment Response DSFISH-8, "National Marine Fisheries Service Recovery Plan, Anadromous Fish Restoration Program Doubling Goals and Biological Opinions."

PORG-10: Please refer to Master Comment Response ALTD-1, "Alternative Development – Water Supply Reliability."

PORG-11: Please refer to Master Comment Response ALTD-1, "Alternative Development – Water Supply Reliability."

PORG-12: Comment noted.

33.10.38 Plumbers and Pipefitters Local Union #228



PPLU

Public Comment Card

During the 90-day public review and comment period for the Shasta Lake Water Resources Investigation (SLWRI) Draft Environmental Impact Statement (EIS), Reclamation p... several methods for ... of written comments. This public comment card is one method for interested persons to submit written comments, wh... included and addressed in the Final EIS and retained in the SLWRI Record. Plea... clearly. You may leave this card at today's meeting or mail at your convenience. Written comments may also be sent by *bor-mpr-slwri@usbr.gov* or provided in-person at related workshops and/or public hearings. All written comments must be sent/postmarked on or before midnight on September 30, 2013.

PPLU-1
PPLU-2
PPLU-3
PPLU-4

Name: John P. Wilson Organization: Plumbers & Pipefitters 228 40
Address: 628 Center Dr.
Email: jwilson631@aol.com

Comment: Build it. We need the storage the jobs And more Recreation Area. The public benefit is great. Build it with a Project Labor Agreement.

Please continue to send me information

Build 200 feet for the future or we will never build it again.

Build Sites, Resave or other dams to generate power on different sites.

Responses to Comments from Plumbers and Pipefitters Local Union #228

PPLU-1: Please refer to Master Comment Response GEN-5, "Some People Support Dam Raise and Others Oppose Dam Raise."

PPLU-2: Please refer to Master Comment Response MAILINGLIST-1, "Addition to the Mailing List."

PPLU-3: Please refer to Master Comment Response GEN-2, "Unsubstantiated Information."

PPLU-4: Please refer to Master Comment Response ALTD-1, "Alternative Development – Water Supply Reliability."

33.10.39 Rotary Club of Redding

7/23/13 DEPARTMENT OF THE INTERIOR Mail - Comment Draft EIR

RCOR

SLWRI, BOR MPR <sha-mpr-slwri@usbr.gov>

Comment Draft EIR

1 message

Randall Smith <randall_smith@charter.net> Sun, Jun 30, 2013 at 2:06 PM
To: BOR-MPR-SLWRI@usbr.gov

Dear BOR,

RCOR-1

Unable to review the Draft document leaves some disadvantage making comment upon it. The document may contain information sent to Katrina Chow previously, or it may not. In any event, the Final EIR prepared for raising Shasta Dam should include study, evaluation, written report (at least comment) explaining why the number one recommendation of the federal 1940 " Special Scientific Report #10, An Investigation of Fish-Salvage Problems in Relation to Shasta Dam" was never implemented, why such is not being considered now. Stillwater Creek has all of the nearly perfect salmonid spawning potential Stanford Professor Hanson and his team knew over seventy years ago. The necessary infrastructure to convey cold Sacramento River water has been built with federal money and is called the Bella Vista Water District. This sound idea needs to be visited again and now with minimal funding for pumping coming from those to whom this non consumptive water will be delivered.

Very truly yours,

Randall R. Smith, Chair
Environment Committee
Rotary Club of Redding
955 Sierra Vista Drive
Redding, CA 96001
30 Jun 2013

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Responses to Comments from Rotary Club of Redding

RCOR-1: Please refer to Master Comment Response ALTR-1, "Range of Alternatives – General."

33.10.40 Rivers for Change

RFC

DEIS comments regarding Proposed

John Dye <john@riversforchange.org> Mon, Sep 30, 2013 at 10:19 PM
To: BOR-MPR-SLWRI@usbr.gov
Cc: Danielle Katz <danielle@riversforchange.org>

To: Katrina Chow, Project Manager,
Reclamation, Planning Division,
2800 Cottage Way
Sacramento, CA 95825-1893

From: John Dye
Board Vice President
Rivers for Change
634 Galerita Way
San Rafael, Ca. 94903

Re: Shasta Lake Water Resources Investigation, California
Draft Environmental Impact Statement

With regard to the DEIS for Shasta Reservoir:

RFC-1 I respectfully object to the proposed enlargement of the dam on the following grounds:

RFC-1 CONTD

The DEIS states the purpose of the proposed dam expansion is to respond to "increasing demands for water supplies and growing concerns over declines in ecosystem resources in the Central Valley of California…". This is an unnecessary expenditure of tax payer dollars and strain on the treasury. If we do not first begin with more economically feasible and fiscally responsible efforts which benefit Sacramento River water users both private and public, expansion projects will fail in their objectives. The areas to address prior to any dam or infrastructure expansion are:

RFC-2

AG Efficiency: Many Central Valley growers who receive Sacramento River water practice flood irrigation, a most exhaustive and inefficient method of growing crops. Flood irrigation also contributes to rapid salinity increase in farmlands, rendering them unfit for crop production.

RFC-3

Residential Efficiency: Many Central Valley communities do not meter residential use. (Example Fresno enjoys some of the lowest priced subsidized water in the state, they also have some of the highest use in the state, and none of it is regulated. They need a cohesive conservation program and incentive to conserve). Without a cohesive plan for responsible residential consumption, future water development is a wasted effort.

RFC-4

California has no statewide regulation of ground water pumping. As pumping is used in combination with irrigation, a conservative approach with both resources is needed for a successful outcome

The report does not clearly state where the following are taken into affect:

RFC-5

- The value of the rivers proposed to be flooded: Areas of the Sacramento, the McCloud and the Pitt. What value does the Bureau assign to these rivers and how will they compensate Californians for their loss?

RFC-6

- What is the increased evaporation rate for the expanded reservoir and how was this included in the theoretical increase of deliverable flows?

RFC-7

- What is the level of silt build up in the existing reservoir?

RFC-8

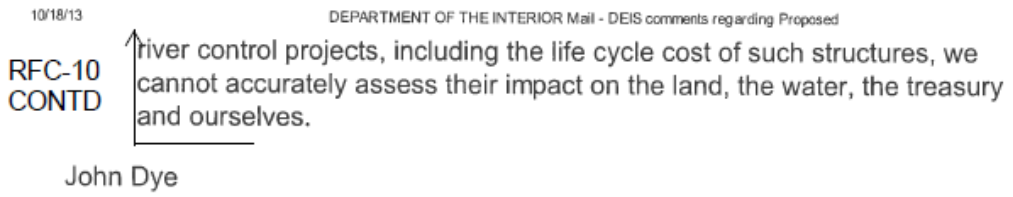
- How much would dredging the existing reservoir increase capacity without increasing evaporation rates or flooding natural areas, flowing rivers and sensitive tribal lands?

RFC-9

- What is the annual loss of revenue due to severely compromised fish stock in the Sacramento River. How much of this revenue loss, since the completion of the dam can be attributed to Shasta Dam?

RFC-10

Until we the voters, the Bureau and all stakeholders look at the true cost of



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Responses to Comments from Rivers for Change

RFC-1: Please refer to Master Comment Response ALTR-1, "Range of Alternatives – General," and Master Comment Response COST/BEN-1, "Intent of EIS and Process to Determine Federal Interest."

RFC-2: Please refer to Master Comment Response ALTD-1, "Alternative Development – Water Supply Reliability," Master Comment Response COST/BEN-1, "Intent of EIS and Process to Determine Federal Interest," and Master Comment Response COST/BEN-2, "Comments Related to the SLWRI Feasibility Report."

RFC-3: Please refer to Master Comment Response ALTD-1, "Alternative Development – Water Supply Reliability," and Master Comment Response ALTR-1, "Range of Alternatives – General."

RFC-4: The state regulatory framework for groundwater resources as it pertains to the SLWRI is described in the EIS in Chapter 6, "Hydrology, Hydraulics, and Water Management," Section 6.2.2, "State."

Chapter 2 of the DEIS, "Alternatives," Section 2.3.1, "Management Measures Common to All Action Alternatives," describes the management measures retained during the alternatives development process that are included, to some degree, in all of the action alternatives. For the SLWRI, all action alternatives include a water conservation program for new water supplies that would be created by the project to augment current water use efficiency practices. The proposed program would consist of a 10-year initial program to which Reclamation would allocate approximately $1.6 million to $3.8 million to fund water conservation efforts. Funding would be proportional to additional water supplies delivered and would focus on assisting project beneficiaries (agencies receiving increased water supplies because of the project), with developing new or expanded urban water conservation, agricultural water conservation, and water recycling programs. Program actions would be a combination of technical assistance, grants, and loans to support a variety of water conservation projects, such as recycled wastewater projects, irrigation system retrofits, and urban utilities retrofit and replacement programs. The program could be established as an extension of existing Reclamation programs, or as a new program through teaming with cost-sharing partners. Combinations and types of water use efficiency actions funded would be tailored to meet the needs of identified cost-sharing partners, including consideration of cost-effectiveness at a regional scale for agencies receiving funding.

Please refer to Master Comment Response ALTD-1, "Alternative Development – Water Supply Reliability."

RFC-5: Please refer to Master Comment Response GEN-1, "Comment Included as Part of the Record."

RFC-6: Please refer to Master Comment Response RE-1, "Reservoir Evaporation."

RFC-7: Please refer to Chapter 4, "Geology, Geomorphology, Minerals, and Soils," of the EIS and Chapter 7, "Water Quality," Section 7.1.2, "Sediment," for a description of sediment and erosion potential at the current Lake Shasta.

RFC-8: Please refer to Master Comment Response ALTD-1, "Alternative Development – Water Supply Reliability."

RFC-9: This DEIS does not assess the annual loss of revenue due to compromised fish stock in the Sacramento River since the completion of Shasta Dam. This project only evaluates the potential effects to Chinook salmon and other Sacramento River fisheries from raising Shasta Dam and the No-Action Alternative.

Please refer to Master Comment Response DSFISH-6, "Historic Dam Effects on Fisheries."

RFC-10: Operations and maintenance life cycle costs are included in cost estimates for SLWRI action alternatives. Total annual costs for action alternatives are included in Attachment 1, "Cost Estimates for Comprehensive Plans," to the DEIS Engineering Appendix. Updated total annual costs for action alternatives were included in the SLWRI Final Feasibility Report.

Please refer to Master Comment Response COST/BEN-1, "Intent of EIS and Process to Determine Federal Interest."