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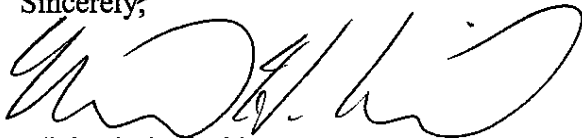
**Re: Comments by PG&E to Sacramento LAFCo's Draft EIR for the Proposed
SMUD Annexation and Sphere of Influence Amendment**

Dear Mr. Brundage:

Thank you for allowing PG&E the opportunity to review and comment on the Draft EIR prepared by LAFCo for SMUD's proposed annexation of territory in Yolo County. I am enclosing PG&E's comments with this letter, and also enclosing various attachments to the comments supporting our position.

Thank you for your consideration of these comments. If you have any questions, please feel free to call me directly (415) 268-6718.

Sincerely,



Michael H. Zischke

Enclosures

**COMMENTS BY PACIFIC GAS AND ELECTRIC COMPANY ON
SACRAMENTO LOCAL AGENCY FORMATION COMMISSION'S DRAFT
ENVIRONMENTAL IMPACT REPORT FOR THE PROPOSED AMENDMENT
OF THE SPHERE OF INFLUENCE FOR THE SACRAMENTO MUNICIPAL
UTILITY DISTRICT (SMUD) AND ANNEXATION BY SMUD OF AREAS
OF YOLO COUNTY**

(STATE CLEARINGHOUSE NO. 2005092009)

FEBRUARY 21, 2006

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I. INTRODUCTION AND OVERVIEW

A. Introduction

Pursuant to the January 6, 2006, Notice of Availability and Notice of Public Hearings of the Draft Environmental Impact Report (“DEIR”) prepared for the Sacramento Local Agency Formation Commission (“LAFCo”) for the proposed amendment of the Sphere of Influence for the Sacramento Municipal Utility District (“SMUD”), Pacific Gas and Electric Company (“PG&E”) submits its comments on the DEIR. PG&E objects to the approval of the SMUD annexation as set forth in LAFCo’s legally inadequate DEIR.

For the reasons stated below, the DEIR is fundamentally inadequate and fails to evaluate some of the most basic environmental issues, particularly impacts relating to the siting of new facilities in sensitive habitat and wildlife areas. Because the legal defects and factual misstatements and omissions are so significant, LAFCo must withdraw and revise the DEIR to meet the requirements of the California Environmental Quality Act (“CEQA”) and then reissue it for public comment.

PG&E’s comments are divided into two general categories. First, the comments analyze the ways in which the DEIR fails to meet CEQA’s legal requirements. Second, the comments identify the misstatements and omissions of facts and incorrect factual assumptions which form the erroneous basis of the DEIR and the annexation in general. PG&E has raised many of these legal and factual concerns in the past, such as in its comments on the Notice of Preparation, but PG&E raises them again because the DEIR fails to adequately address them.

B. Overview of these Comments

The analysis first demonstrates why the DEIR is legally deficient and violates several basic CEQA principles. Among other things, the DEIR is unlawful because:

- CEQA does not allow the tiered review approach chosen by LAFCo because the construction components of the project, especially the Woodland-Elverta Transmission Line and Willow Slough Substation, are “reasonably foreseeable” and there exist “sufficient reliable data” for analysis now. The DEIR impermissibly defers analysis of significant environmental impacts that must be conducted now.
- The DEIR relies on vague unspecified mitigation measures to reduce impacts to less than significant, but it does not show that the measures will be effective. The effectiveness of many of the mitigation measures cannot be known without examining specific sites and construction plans, including the Woodland-Elverta Transmission Line alignments and the Willow Slough Substation sites.

- The alternatives analysis fails to analyze alternative transmission line routes, it fails to adequately compare environmental impacts, and its analysis of specific alternatives is flawed and factually incorrect.
- The DEIR fails to address changes in the energy supply to greater reliance on local gas-fired plants which will impact air quality.
- SMUD, as the agency which is carrying out the annexation, should be the lead agency, not LAFCo.
- Implicit in CEQA is that the analysis should be objective, neutral and unbiased. The DEIR is a one-sided advocacy piece for the annexation.

The second section of the analysis identifies several of the DEIR's underlying factual assumptions that misstate facts, omit material facts, or contradict LAFCo's own record in this proceeding, and therefore are inaccurate and lack evidentiary support. Among other things:

- The DEIR's fundamental factual assumption that the annexation will result in lower rates in the annexation area and no additional costs to existing SMUD customers. Because the evidence shows this likely will not be the case, the DEIR is flawed and the need to accurately analyze the serious environmental impacts of the project is even more acute. PG&E has previously submitted extensive documentation to LAFCo on this issue and the comment letter references these materials.¹ LAFCo staff and its consultants are currently reviewing PG&E's analysis of the key determinants of SMUD's future rates, which are SMUD's likely costs to acquire PG&E's facilities and SMUD's likely costs of acquiring new sources of power to replace PG&E's sources. One of the primary objectives of the annexation is reduced rates, so if the DEIR's factual assumption is incorrect, the No Project Alternative is preferable and there is little reason to move forward with the project with its numerous environmental impacts. In any event, the DEIR's analysis is premature because LAFCo itself has not completed its evaluation of SMUD's projected costs to serve the annexation area.
- The DEIR's additional factual assumptions that the annexation will improve reliability and increase customer satisfaction are also contradicted by the facts in the record and therefore the DEIR's analysis is flawed. Again, without this rationale for the annexation, the No Project Alternative is preferable and the need for the project is put into doubt.

¹ At LAFCo's request, PG&E is preparing an update of this material which substantiates the previous estimates of significant rate increases associated with the annexation, and will submit this update to LAFCo shortly.

- The annexation will cause PG&E to modify facilities sooner than would be required otherwise. The DEIR fails to analyze the impacts from these modifications.
- SMUD and Yolo County jurisdictions have not yet entered into formal, legally enforceable agreements to offset the loss of property tax and franchise fee revenues to the local jurisdictions that would be caused by the project, and therefore the DEIR is premature and omits any sufficient analysis of the impacts of the lost revenues on public services and the environment.
- The DEIR fails to include any detailed discussion of the adverse impacts of the annexation project on the overall reliability of electricity service in the State of California due to fragmentation of the transmission grid, as well as impacts on the achievement of the environmental, energy conservation and renewable energy policy goals of the State Energy Action Plan, which SMUD neither recognizes nor adheres to.

II. THE DRAFT ENVIRONMENTAL IMPACT REPORT IS LEGALLY INADEQUATE AND FAILS TO FULLY ANALYZE ENVIRONMENTAL IMPACTS AS REQUIRED BY CEQA

A. The “Study Area” Approach Defers Analysis That Must Be Conducted Now

As PG&E described in its October 3, 2005 comment letter on the Notice of Preparation, the “tiered” review approach, in which the impacts of the Elverta-Woodland Transmission Line (“Transmission Line”) and the Willow Slough Substation (“Substation”) are analyzed only on a “programmatic” level, and even cursory review of specific impacts is deferred until after the project has been approved by LAFCo and the voters, violates CEQA. The CEQA Guidelines and case law make clear that tiering may not be used to defer the analysis of “reasonably foreseeable significant environmental impacts” in order to avoid addressing them in the initial EIR. CEQA Guidelines §15152(b). These facilities, particularly the Transmission Line, are likely to have the most significant environmental impacts of the project, a fact recognized in the DEIR, yet as the CEQA review is currently structured, the impacts will not be analyzed in detail until after the project has been approved. Labeling the document a “program” EIR does not escape the requirement to disclose all that is reasonably knowable about the project’s impacts.

While PG&E made this same comment when the Notice of Preparation was issued, the shortcomings of LAFCo’s approach are more apparent now that the DEIR has been completed. When analyzing the environmental impacts, in numerous sections the DEIR either states that the impacts are not fully known because a preferred route or site has not been selected, or it states that there may be significant impacts but they will be reduced by implementing mitigation measures, the effectiveness of which cannot be known without examining specific routes and sites. Thus, the DEIR is deficient because it impermissibly avoids discussion of certain significant environmental impacts and

because it cannot establish the effectiveness of mitigation measures relied on to reduce significant impacts.

1. CEQA requires detailed analysis of “reasonably foreseeable significant environmental impacts” for which there is “sufficient reliable data”

All environmental impacts which are a “reasonably foreseeable consequence” of the approval must be reviewed in an EIR – whether or not it is a “program” or “project” level EIR – when there is “sufficient reliable data to permit preparation of a meaningful and accurate report on the impact[s].” *Los Angeles Unified Sch. Dist. v. City of Los Angeles*, 58 Cal.App.4th 1019, 1028 (1997). Failure to analyze such foreseeable impacts renders the EIR inadequate. *Id.* “Calling it a ‘program’ does not relieve the [agency] from having to address the significant environmental effects of [the] project.” *Stanislaus Natural Heritage Project v. County of Stanislaus*, 48 Cal.App.4th 182, 202 (1996). This requirement upholds the basic axiom of CEQA that the EIR must “inform the public and responsible officials of the environmental consequences of their decisions *before* they are made.” *Id.* at 195 (citing *Citizens of Goleta Valley v. Board of Supervisors*, 52 Cal.3d 553, 564 (1990) (emphasis in *Goleta Valley*). As the *Stanislaus Natural Heritage* court stated, approving a project and then analyzing its impacts would “be putting the cart before the horse.” *Id.* at 200. LAFCo’s approach does just that.

An EIR must contain sufficient detail to enable the agency decision-makers and the public to understand and to consider meaningfully the issues raised by the proposed project. *Laurel Heights Improvement Assn’ v. Regents of Univ. of Cal.*, 47 Cal.3d 376, 404-05 (1988). The approach designed by LAFCo and SMUD fails this test. Without analyzing any potential alternative routes for the Transmission Line and sites for the Substation, LAFCo and the voters are deprived of sufficient information to make informed decisions about the environmental impacts of the annexation decision, which will require the construction of these facilities. Blanket and unenforceable statements that the facilities will be sited so as to minimize impacts do not remedy this defect.

2. The Transmission Line, Substation and other construction components will have “reasonably foreseeable” significant environmental impacts and there exist “sufficient reliable data” to analyze specific routes and impacts

The Transmission Line, Substation and other construction components identified in the DEIR are not speculative future facilities, but rather, according to the DEIR, they are *necessary* components of the annexation and will be constructed if it is approved. DEIR, II-17,18. As such, an approval by LAFCo and the voters of the annexation is not only an approval for a change in the entity delivering electricity, but also an approval of these facilities. After approval, the “no project alternative” for the Transmission Line and Substation will no longer be available. It is beyond doubt that these facilities are “reasonably foreseeable,” they must be analyzed in the DEIR for the annexation, and analysis may not be deferred for post-approval review.

The Transmission Line and Substation are likely to have the most significant environmental impacts of any project activity if the annexation is approved. These are major new facilities which will likely have significant impacts in nearly every area examined, including impacts on aesthetics, agricultural resources, air quality, biological resources, cultural resources, hazards, land use/planning, noise, and population/housing. Most of these impacts, however, are site specific and thus cannot be adequately analyzed without knowing where they will be located.

LAFCo's approach was rejected in *Stanislaus Natural Heritage*. In that case, Stanislaus County approved an EIR for a major residential development which would be built out over a 25-year period, even though water for the project had not been assured beyond the first 5 years. The EIR designated establishment of a firm water supply for the remaining years as a significant impact, and required that a subsequent EIR be prepared once that water supply is determined. Stanislaus County claimed that this was an appropriate use of tiered review. The court rejected the County's claim, requiring that the source of the water be identified *at the time of the initial approval* and that the impacts be analyzed at that point. *Stanislaus Natural Heritage*, 48 Cal.App.4th at 195-206. In particular, the court found that "a decision to 'tier' environmental review does not excuse" the agency from preparing an EIR with a "detailed statement" setting forth all significant impacts. *Id.* at 197. Like Stanislaus County, LAFCo attempts to use tiered review and the excuse that an aspect of the project has not yet been fully defined to defer detailed analysis until after the project has been approved. This approach is not permitted.

In addition, there is currently "sufficient reliable data" to determine specific routes and locations of the facilities and thus there is no reason to defer analysis until a later date. There is no information that is not available now – or that cannot be developed now just as easily as it could at a later date – that will be available later that is needed to analyze potential routes for the Transmission Line and sites for the Substation. For the Transmission Line, LAFCo and SMUD know the starting and ending points, the general length of the line (15-18 miles), and the type and size of structures. *See*, DEIR, II-17. For the Substation, the agencies know its location to within one square mile and the type and size of the structure. *Id.*, at II-18. The only missing piece is where precisely the facilities will be placed, a decision that can just as easily be made today as it can be made after the annexation approval. Alternatively, a number of likely potential alignments could easily be disclosed and discussed. There are not so many different variables that a few likely potential routes are impossible to analyze. As such, there currently exist "sufficient reliable data" to analyze specific routes and locations. The significant difference is that if the analysis of the route is deferred, the citizens who will live next to the facilities and who will be most impacted will no longer have a right to vote on the project.

None of the annexation documents claim that specific routes cannot be meaningfully analyzed now. In fact, the only rationale the DEIR offers for the deferred analysis approach is that it allows "LAFCo to focus its decision on governmental efficiency questions and ... the agency with expertise on electrical service (SMUD) to focus its subsequent environmental analysis on those areas (the best way to provide

electrical service to an area).” DEIR, ES-2,3. This reasoning confuses LAFCo’s role under the Cortese-Knox Hertzberg Act and its role as the lead agency under CEQA. CEQA review has nothing to do with the “governmental efficiency questions,” but rather it is about identifying environmental impacts that will result from a proposed project. Nothing in CEQA allows the lead agency to delegate environmental review to the agency it feels has greater expertise.² CEQA requires that the lead agency fully analyze all significant environmental impacts prior to approval, not just those impacts it feels it is best suited to examine.

Not only would choosing a route or site or identifying likely routes and sites be possible now, but evidence demonstrates that SMUD has already begun the route and site selection process. In the April 18, 2005 SMUD Staff Report, when comparing options, the report notes that “Staff has evaluated the technical and real estate rights-of-way issues involved in building the new line.” Yolo Annexation Feasibility Study, Staff’s Assessment and Recommendations, Final Report, April 18, 2005, 23 (“Staff Report”). In addition, there are certain factors, such as the Sacramento International Airport and the Sacramento River, that clearly limit available routes and make specific alternatives knowable now.

Without a technical reason for not identifying specific routes and locations, it is difficult not to conclude that SMUD and LAFCo have structured the CEQA review so as to conceal the full impacts of the annexation. In order for the annexation to proceed, voters who live and work along potential Transmission Line routes must first approve it. LAFCo’s approach allows it to identify impacts generally, promise mitigation measures without actually determining if they are feasible, and, importantly, not put the Transmission Line in any voter’s backyard. A specific route or routes, on the other hand, may be more likely to raise concern and opposition among voters. In fact, one of the first issues raised by local citizens in relation to the annexation was concern over routing of the Transmission Line. Letter from Karen L. Diepenbrock, counsel to the Brookfield Land Company, to John DiStasio and Paul Lau, SMUD, May 24, 2005.

The Transmission Line and Substation are “reasonably foreseeable” actions for which there is “sufficient reliable data” to evaluate their impacts now. Under basic principles of CEQA case law, this analysis must be conducted now and cannot be deferred.

3. It is improper and contrary to CEQA for the DEIR to evaluate SMUD’s project with less detail than is required for a private utility project

When a private party, such as PG&E, proposes to construct a transmission line, the CPUC’s analysis includes specific alternative routes and it examines the specific impacts associated with each route. This is the same amount of detail that should be in LAFCo’s DEIR. CEQA requires that public agency projects are subject to the same level

² The fact that SMUD is better positioned to analyze the impacts of the most significant facilities is another reason that SMUD, not LAFCo, is the proper lead agency. See discussion in Section II.G below.

of environmental review as private projects. Pub. Res. Code §21001.1. When PG&E proposes to construct a new transmission line, the environmental document analyzing the line looks at several alternative routes in detail and compares the environmental impacts of each specific route. (See, e.g. California Public Utilities Commission, “PG&E Jefferson-Martin 230 kV Transmission Project Draft Environmental Impact Report,” and subsequent final EIR and addendum to final EIR, incorporated by reference herein, available at: http://www.cpuc.ca.gov/Environment/info/aspen/jefferson_martin/deir.htm, and http://www.cpuc.ca.gov/Environment/info/aspen/jefferson_martin/feir.htm) LAFCo’s “Study Area” approach would never be accepted for a private party transmission line project and it should not be accepted here.

B. The Impacts Analysis is Incomplete and Premature Because a Specific Transmission Line Route Has Not Been Identified

A closer look at the DEIR demonstrates why LAFCo’s tiered approach is inadequate. In numerous instances throughout the impacts analysis, the DEIR states that the impacts from the Transmission Line, Substation, and/or other construction components, are either not known, or they will be minimized by implementing mitigation measures. In the latter situation, the DEIR usually concludes that potentially significant environmental impacts will be avoided or reduced to a less than significant level without analyzing whether the mitigation measures can actually be implemented. In fact, it is doubtful that a transmission line route exists that meets all BMP’s and mitigation measures.

1. Impacts the DEIR identifies as “unknown” because specific routes and locations have not been chosen

There are numerous instances in which the DEIR finds that the impacts are not known. The following identifies points in the DEIR where it finds that the impacts of the Transmission Line or Substation are not known because a specific preferred route or site has not been chosen so it simply labels them significant. Because these impacts cannot be known without analysis of specific routes or locations, the DEIR does not “provide decision-makers with information which enables them to make a decision which intelligently takes account of the environmental consequences.” CEQA Guideline §15151. As the court rule in *Stanislaus Natural Heritage* found, an EIR cannot defer analysis of such fundamental issues regarding a project and only evaluate them after initial approvals. *Stanislaus Natural Heritage*, 48 Cal.App.4th at 199-203. Simply labeling unknown impacts “significant” does not cure this defect.

- **AES-1: Visual Impact to Scenic Corridors.** The DEIR notes that County Roads 16 and 117 are within the Transmission Line Study Area and that “if towers are located within one-quarter mile . . . a *potential* visual impact will occur.” DEIR, IV-4 (emphasis added). Whether these roads will actually be impacted, and if so, how they will be impacted, cannot be known until a specific route is selected.

- AES-2: Conflict with Scenic Policies of Yolo and Sacramento County General Plans.** The DEIR sets a threshold of significance in the Aesthetics Section as a conflict with scenic resources policies in the Yolo and Sacramento County General Plans. However, it recognizes that without a specific route, it cannot be determined whether there is a conflict: “The specific location of the Woodland-Elverta transmission line has not been selected. *Therefore, it is not possible to evaluate the visual effects of this transmission line at this time.* A separate project-specific CEQA document will be prepared to evaluate the location of this transmission line when it is identified.” DEIR, IV-5 (emphasis added). Although the DEIR found that this visual impact could not be evaluated and thus is unknown, it nonetheless found the impact to be less than significant. *See* TableI-1. Without evaluating this impact further, there is no basis for this conclusion.
- BIO-6: Habitat Conservation Plans.** Analysis of impacts of the Transmission Line on HCPs in the area is inadequate because it fails to analyze whether the Transmission Line will cross through or adjacent to any preserves created under the Natomas HCP. DEIR, IV-94. The DEIR states that impacts will be less than significant because the amount of permanent land use will be less than 1 acre and the lines will use vision enhancers to reduce bird collisions. However, all land that is purchased as mitigation land and made into a preserve under the Natomas HCP must be “suitable as habitat for the covered species.” *National Wildlife Federation v. Norton*, 306 F.Supp.2d 920, 923 (E.D.Cal. 2004). The DEIR includes no analysis of whether the Transmission Line will cross a preserve, which could potentially change the land so that it is unsuitable habitat, particularly for the Swainson’s Hawk. The Sacramento International Airport will likely push the Transmission Line to the far northern portion of the Study Area, and preserves in this area form a north-south swath which would need to be crossed. As a result, the Transmission Line must either cross or run adjacent to one or more Natomas HCP preserves. (the current map of Natomas HCP preserves is available at www.natomasbasin.org) The DEIR must address whether the Transmission Line will cross a preserve and determine whether it will impact the suitability of the preserve as habitat for the covered species. This analysis cannot be adequately conducted without a specific Transmission Line route.
- NOI-1c, 1d: Noise from Construction of the Transmission Line and Substation.** The DEIR notes that construction activities relating to the Transmission Line and Substation may have significant noise impacts to nearby residences, although these impacts depend on the exact future location of construction activities. DEIR, IV-157. Again, this runs afoul of the rule in *Stanislaus Natural Heritage*, that it is inadequate to simply label unknown impacts significant and return to them after the project has been approved. Under CEQA, the landowners in the Study Areas have a right to know if the project they are being asked to approve will result in construction in their backyard.

As these sections of the DEIR demonstrate, the failure to analyze specific routes and locations for these major facilities renders the document inadequate and any decision on the project by LAFCo will be made based on incomplete information of the environmental impacts.

C. The DEIR is Defective Because it Relies on Mitigation Measures Without Showing that the Measures will be Effective

The DEIR relies on numerous mitigation measures to reduce significant impacts from the Transmission Line and Substation to a less than significant level. However, without a specific Transmission Line route or specific Substation location, LAFCo cannot determine whether the proposed mitigation measures will be effective in avoiding or reducing the impacts to a less than significant level. In fact, it is doubtful that a Transmission Line route exists that complies with all BMPs and mitigation measures LAFCo relies on to find that the impacts are less than significant. In addition, many of the BMPs and mitigation measures are vague and do not impose specific criteria or standards by which effectiveness of the requirement can be measured.

In order to approve a project, CEQA requires an agency to find that significant environmental impacts will be mitigated to a less than significant level or to find that other considerations make the mitigation measures or alternatives infeasible. CEQA Guideline §15091. In order to rely on a mitigation measure to reduce environmental impacts, the measure must actually be effective and implemented. An EIR is defective which relies on vague or undefined mitigation measures or mitigation measures that may not be effective. *Sundstrom v. County of Mendocino*, 202 Cal.App.3d 296, 308-09 (1988) (negative declaration invalid in part because not clear that mitigation measure could be accomplished); *Kings County Farm Bureau v. City of Hanford*, 221 Cal.App.3d 692, 727-28 (1990) (EIR was inadequate in part because it relied on a mitigation agreement that called for purchases of replacement groundwater supplies without specifying whether water was actually available); *Endangered Habitats League, Inc. v. County of Orange*, 131 Cal.App.4th 777, 794 (2005) (mitigation measure inadequate because requirement that stockpiles and vehicle staging areas be placed “as far [away] as practicable” was not a specific performance criteria). For numerous impacts, LAFCo finds that the Transmission Line and Substation will be routed and constructed in such a way that it will avoid the impact or reduce it to less than significant. However, nothing in the DEIR shows that these mitigation measures will be effective, and in fact, it is doubtful that a route exists that can meet all mitigation requirements. Without analyzing specific routes, the effectiveness of the mitigation measures cannot be known. In addition, many of the mitigation measures are vague and do not contain specific performance criteria for LAFCo to determine whether the impact is actually mitigated.

The following mitigation measures are inadequate because either the DEIR does not show that they will be effective or because they are vague, unspecified and lack specific performance criteria.

- **AG-2: Acquisition or Easement Across Adopted Agricultural Preserve or Williamson Act Land.** The DEIR first states that acquisition of rights of way

for the Transmission Line across lands under Williamson Act contract will be a significant impact. DEIR, IV-11. But then it says that after BMP 1, which requires avoiding, whenever possible, crossing prime or statewide importance farmland, it will be less than significant. But the DEIR does not analyze whether a route exists that avoids all such lands. The land in the Study Area in Yolo County is almost entirely Williamson Act land (*see* DEIR, Figure IV.B-1), so evidence demonstrates that this impact can unlikely be mitigated. In addition, the second threshold of significance in the Agricultural Resources section is flawed because the impact is dependent on whether crossing Williamson Act contract lands can “practicably” be avoided. While siting of the Transmission Line should avoid Williams Act lands “whenever practicable,” the significance of the impact cannot depend on whether avoidance can be practicably achieved, but rather significance depends on whether the line will cross land under contract. By defining the threshold as such, it renders the mitigation measure meaningless since mitigation can be achieved simply by *attempting* to route the line around certain lands, but there is no *requirement* that contract land be avoided. This lacks the “specific performance criteria” required by courts for mitigation measures. *Endangered Habitats League, Inc.*, 131 Cal.App.4th at 794. In addition, LAFCo knows the starting and ending points of the Transmission Line, and thus should determine now whether a “practicable” route exists that avoid Williams Act lands.

- **BIO-1: Impacts to Special-Status Species.** The DEIR identifies a long list of special status species potentially present in the Study Areas, but it concludes that impacts from the Transmission Line and Substation will be less than significant based on the implementation of BMPs. This conclusion is not supported by substantial evidence in the DEIR. Without a specific route and knowing which types of sensitive habitat the Transmission Line will impact, LAFCo cannot analyze whether the BMPs will actually reduce impacts to a less than significant level. An example of the project specific type of study that should be conducted for impacts to biological resources from the Transmission Line/Substation can be found within the DEIR itself. For Program Component 4 (Power Inn Road to Hedge Substation Transmission Line Reconstruction Study Area), LAFCo conducted site specific analysis, including a formal wetland delineation for the 50-foot-wide transmission line route, and an informal delineation for a 300-foot buffer area surrounding the route. Suitability of habitat for special status-species was also assessed along the transmission line, as was an informal survey for burrowing owls and raptor nests. At a bare minimum, the DEIR must undertake similar studies for the Transmission Line route and Substation. Without this type of detailed, site-specific information, LAFCo cannot conclude that construction of a major facility along a 15-18 mile corridor will have no significant impacts on biological resources. The DEIR identifies 50 special status species, including 37 special status animal species, that could be potentially present in the Transmission Line Study Area. Without detail on where the Transmission Line will be routed and how these species might be impacted, the DEIR

analysis is inadequate and BMP 2 cannot be relied on to reduce all impacts to less than significant. BMP 2 is vague, it lacks specific performance criteria, and the enforcement mechanism is inadequate. For example, sensitive habitats or active nest locations will be avoided “where feasible.” However, if it is “infeasible” to avoid these areas, then the impact will be significant. LAFCo must conduct the analysis now of whether biological resources will be impacted by examining the site-specific impacts along an actual proposed route. Without analysis of a specific route and the biological resources present within the vicinity of the route, LAFCo cannot know whether the mitigation measures will be effective.

- **Reliance on BMP 2.** The entire Biological Resources section relies heavily on BMP 2 to reduce impacts to less than significant. However, as described in the previous section, without knowing the specific route of the Transmission Line, it is not possible to determine whether the measures will actually reduce the impacts to less than significant and thus it is inappropriate to rely on BMP 2. This approach is akin to the approach rejected by the court in *Sundstrom v. County of Mendocino*, 202 Cal.App.3d 296 (1988). In *Sundstrom*, the agency adopted a mitigated negative declaration with the condition that after approval the applicant conduct hydrological studies and incorporate mitigation measures recommended by the studies. The court found that studies conducted after approval “will inevitably have a diminished influence on decisionmaking,” and rejected this approach. *Id.* at 307-08. LAFCo is doing just that. It essentially proposes to study the biological impacts after approval, submit reports to LAFCo and incorporate mitigation measures suggested in the studies into design features. DEIR, IV-95, 96. As the *Sundstrom* court wrote, this “is analogous to the sort of post hoc rationalization of agency actions that has been repeatedly condemned in decisions construing CEQA.” *Sundstrom*, 202 Cal.App.3d at 307. Cases which allow deferral of the development of specific mitigation measures are distinguishable in that, in those cases, the deferred mitigation measures were for subsequent project phases that were uncertain and that would not necessarily occur as a result of project approval. *See e.g., Rio Vista Farm Bureau Center*, 5 Cal.App.4th 371, 375-76 (rejected claim that specific sites for hazardous waste treatment facilities must be analyzed because uncertain whether any site would be developed). Because the Transmission Line and Substation are certain to occur if the annexation is approved, the effectiveness of the mitigation measures must be established now.
- **BIO-1e: Loss of Special-Status Bird Species from Collisions with Transmission Lines.** BMP 2 calls for line spacing and visual enhancers, as described in the Avian Protection Plan Guidelines, which the EIR finds will reduce impacts of bird collisions to less than significant. But the Avian Protection Plan Guidelines make it clear that line spacing and visual enhancers may not alone be sufficient and that site specific analysis is required. For example, the proximity to high bird-use areas, vegetation that might attract birds, and topographical features that affect local and migratory

movements should be considered when making siting and remedial action decisions. Avian Protection Plan Guidelines, 41. None of this analysis is required by the DEIR. In addition, the Guidelines state that “[a]voiding construction of new lines in areas of high bird use may be the best way to prevent or minimize collision issues.” *Id.*, at 41. Thus, the requirement that the Transmission Line use proper spacing and visual enhancers without any analysis of the site specific conditions does not necessarily mitigate the problem of collisions. Without analyzing a specific route, the effectiveness of this BMP is unknown.

- **HAZ-2: Conflict with Airport Comprehensive Plans:** The DEIR states that SMUD will work with the airports and the FAA to ensure that the Transmission Line is sited outside the airspace protected for the safe operation of area airports and airstrips. DEIR, IV-125. But LAFCo makes no finding that a specific route exists within the Study Area that meets this requirement, as well as other BMP’s relied on in other sections. A quick analysis demonstrates that the 20,000 foot (or 3.8 mile) buffer zone required for the Sacramento International Airport for a 200 ft tower³ limits the Transmission Line route to the northern-most portion of the Study Area. Current plans for SIA envision extending the current eastern runway 2,400 feet to the north, bringing it within close proximity to Elverta Road and the southern boundary of the Study Area. Sacramento International Airport Master Plan, Section 5.1.1 (February 17, 2005). Thus, even though the Study Area is 4.5 miles wide to the north of SIA, due to the airport, only a thin corridor is available for the Transmission Line, and as is described above, no route is possible in this corridor without crossing a Natomas HCP preserve. As is described further below, significant residential development is planned for much of the northeastern portion of the Study Area. How all these areas will be avoided is a mystery. The DEIR must include specific analysis finding that a route exists in the Study Area that complies with FAA requirements, as well as other mitigation measures.
- **LU-2: Conflict with Policies of Sacramento County General Plan.** The DEIR states that the transmission facilities will not conflict with the Sacramento County General Plan because they will meet the General Plan’s electric distribution policies. DEIR, IV-141. But LAFCo cannot assure this without analyzing specific routes. Appendix D, which LAFCo cites to support the claim, simply states that “SMUD will engage in a cooperative effort with agencies, local jurisdictions, property owners, and the public” to determine an alignment for the facilities. However, the DEIR also notes that SMUD can override disapproval by a local jurisdiction with a supermajority vote. Moreover, the electric transmission facility siting policy notes that “it is often impossible to select a right-of-way which uncompromisingly meets all the policies.” DEIR, Appendix D, Public Facilities Element of the County of

³ This is the buffer zone calculated in the DEIR. (DEIR, IV-122). It is anticipated that 200 ft towers will be needed at the Sacramento River crossing, which is directly north of SIA. (*Id.* II-17)

Sacramento General Plan, 43. Thus, according to the DEIR, SMUD will cooperate with the local jurisdictions (unless they disagree) to site the facilities such that they comply with vague policies, policies that themselves recognize that an ideal route may not exist and some policies may not be met. In addition, without explanation, the DEIR fails entirely to analyze whether the Transmission Line will conflict with land use elements of the Sutter County or Yolo County General Plans even though the majority of the Study Area is located in these counties.

- **LU-3: Conflict with Measure M, Natomas Joint Vision Plan, and SIA Master Plan.** Without offering any analysis to support its conclusion, the DEIR finds that because the Transmission Line siting will comply with the Sacramento City and County zoning ordinances relating to siting of transmission facilities,⁴ it will not conflict with residential developments contemplated by Measure M or the Natomas Joint Vision Plan. DEIR, IV-141. But without analyzing potential routes, LAFCo cannot make this conclusion. The Sacramento City and County ordinances set forth preferences for siting transmission facilities, but they do not prohibit the siting of transmission facilities near the type of residential developments planned for under Measure M and Natomas Joint Vision Plan. Thus, without analyzing specific routes, simply stating that the siting will conform to these ordinances does not mean that the facilities will not conflict with Measure M and the Natomas Joint Vision Plan. The language used in the DEIR is telling in this respect: “SMUD also will work with the appropriate jurisdictions and landowners *to attempt to ensure* that the transmission line does not conflict with specific development plans. For these reasons, the Program will not conflict with Measure M or the Natomas Joint Vision Plan.” DEIR, IV-141. Thus, the best LAFCo can do is say SMUD will “try” to plan a route that does not conflict with these plans. But a statement that the agency will try says little about what the actual impacts will be. The fact is that under Measure M and the Natomas Joint Vision Plan, significant residential development is envisioned for a large portion of the Study Area, yet there is no analysis of whether a transmission line route exists that would avoid these development plans. LAFCo must determine whether a route exists that avoids these planned developments, and if one does not, it must specify in detail what the impacts will be.
- **PH-3: Preempt Housing on Land Planned for Housing Development.** The DEIR states that it is not possible at this time to determine the effect of the Transmission Line on future community development, including development authorized under Measure M and the Natomas Joint Vision Plan, in part because the specific alignment has not been determined. However, it concludes that because SMUD will work with local jurisdictions on siting decisions, any potential impact is minimized to a less than significant level. DEIR, IV-166. But working cooperatively with local jurisdictions to

⁴ We note that Appendix D does not contain City of Sacramento zoning ordinance 17.24.050.

implement general siting policies does not mean that a route can be selected that avoids all significant impacts to these developments. In addition, the analysis of impacts to Measure M is inadequate. Under Measure M, Sutter County voters approved by 59% a plan to build up to 17,500 residential units supporting an estimated population of 39,000 people in a now undeveloped area that occupies much of the Transmission Line Study Area that is in Sutter County. On January 31, 2006, the Sutter County Board of Supervisors accepted General Plan Amendment Application No. 06-02 filed by the Measure M Group and directed staff to process it, and it is anticipated that a Specific Plan application will be submitted this spring. In addition, the Measure M Group has made much progress in finalizing its development plans for the area. See http://www.co.sutter.ca.us/pdf/cs/ps/measureM/south_sutter_08_30_05.pdf. Given that Measure M envisions significant residential development in a large area of the Study Area and that plans have progressed significantly, it is inadequate for the DEIR to summarily state that there will be no significant impact because SMUD will work with the local jurisdictions on siting issues. The land within the Study Area that is under the Natomas Joint Vision Plan suffers from a similar defect. As in other sections, LAFCo can only say that SMUD will attempt to minimize impacts, but without examining specific routes, it cannot determine whether impacts can actually be minimized.

D. The Project Description is Inadequate and the DEIR is Premature Because Specific Routes and Locations for the Transmission Line Have Not Been Identified

As is described above, the Transmission Line, Substation and other construction components identified in the DEIR are *necessary* components of the annexation and will be constructed if it is approved. DEIR, II-17,18. CEQA requires that the entire project being proposed for approval, and not some subset of it, be described in the EIR. CEQA Guideline §15378(a). This requirement ensures that all of the project's environmental impacts are considered. A lead agency may not split a single large project into small pieces in order to avoid environmental review of all components of the project. *Orinda Ass'n v. Board of Supervisors*, 182 Cal.App.3d 1145, 1171 (1986). Thus, “[r]esponsibility for a project cannot be avoided by limiting the title or description of the project.” *Rural Land Owners Association v. Lodi City Council*, 143 Cal.App.3d 1013, 1025 (1983). Calling this a “program” EIR for an “annexation” does not mean that it can avoid analyzing the specific impacts of the construction of the Transmission Line and Substation. Without specifying the specific alignment and location of these facilities, the project description is inadequate.

Courts have repeatedly found EIRs inadequate when the project description is too narrow such that it fails to describe all aspects that may have environmental impacts. See e.g., *Rural Land Owners Association*, 143 Cal.App.3d at 1024-25 (1983); *Santiago County Water Dist. v. County of Orange*, 118 Cal.App.3d 818, 830 (1981) (EIR for sand and gravel mine inadequate because it failed to include analysis of water pipelines necessary for the project); *San Joaquin Raptor/Wildlife Rescue Center v. County of*

Stanislaus, 27 Cal.App.4th 713 (1994) (EIR inadequate because it did not include analysis of construction of sewer lines and expansion of wastewater treatment plant, facilities necessary for the project). By omitting details of the Transmission Line route and Substation location, the project description in the DEIR is incomplete and premature. This defect is so fundamental that the DEIR must be revised to provide project-specific analysis for each of the construction components and then reissued for notice and comment by the public.

E. The DEIR Fails to Analyze Potentially Significant Impacts from Increased Operation of the Cosumnes Power Plant

The DEIR fails to analyze air impacts that will result from increased operation of the Cosumnes Power Plant (“Cosumnes”) and other sources of electricity supply required to be procured by SMUD to replace PG&E generation and power supplies. The DEIR concludes that whether or not SMUD annexes the Yolo area, Cosumnes will operate “as often as possible, regardless of the proposed annexation.” DEIR, A-3. PG&E disagrees, based in part on conflicting information provided in SMUD’s August 1, 2005 Application for Annexation. The annexation will result in increased operation of Cosumnes and reliance on additional sources of energy supply which will have adverse impacts on regional air quality.

Without annexation, there will be times that Cosumnes will not operate. This is so for several reasons. For one, gas-fired combined cycle power plants in the Pacific Northwest are cheaper to operate than those operated in California, and thus, when demand is low, Cosumnes will likely not operate, and instead power will be purchased from these cheaper sources. The same can be said for other non-gas fired sources, such as hydro, which have the advantage of either negligible fuel costs or cheaper operating costs. As a result, without annexation, there are times that Cosumnes will not operate in order to serve SMUD’s pre-annexation service area.

On the other hand, if the annexation is approved, there will be an increased need and market for Cosumnes power within SMUD’s expanded service area and it will have increased operations. If SMUD annexes the Yolo territory, it will expand the area within which it can deliver locally based Cosumnes power in lieu of importing potentially higher-cost but more environmentally friendly power from outside the area. Because of this expansion of the market for Cosumnes generated power, the plant will operate more frequently, causing increased air emissions.

SMUD recognizes this fact and relied on it in its earlier Staff Report. *See* Yolo Annexation Feasibility Study, Staff’s Assessment and Recommendations, 56. (“Rather than selling off-peak energy at market prices and incurring CAISO fees for delivery, a portion of [Cosumnes’s] energy is assumed to be sold to Yolo area customers.”). In fact, SMUD’s Application counts on estimated financial savings from this strategy. The DEIR contradicts and conflicts with this earlier finding and instead concludes that SMUD intends to meet the needs of the annexation area “through a combination of new short-term and long-term power purchase contracts, spot market purchases, customer-owned generation, new renewable power supply, and possibly surpluses available from the New

Cosumnes Power Plant.” DEIR, II-12 (emphasis added). LAFCo cannot have it both ways.

The DEIR’s analysis is erroneous and incomplete. If it claims that there will be rate reductions due to the availability of Cosumnes power, it must look at how this will impact the mix of local power supply and resulting air quality impacts. The DEIR has a very short discussion on this issue, but concludes that there will be no net impact because PG&E would allegedly be backing down its own natural gas fired generation. DEIR, IV-197. But there is no evidence to support this conclusion and no discussion of SMUD’s greater reliance on local resources such as Cosumnes that will increase air emissions and thus adversely impact air quality. The DEIR must analyze this impact, and adopt mitigation measures where feasible.

F. The DEIR’s Alternatives Analysis is Legally Deficient

The DEIR concludes that the project “will have significant, unavoidable impacts in aesthetics, air quality, and noise” and “will have significant cumulative impacts in the areas of aesthetics, agricultural resources, air quality, biological resources, cultural resources, hazards and hazardous materials, hydrology and water quality, land use, noise, population and housing, public services, recreation, transportation and traffic, and utilities/service systems/energy conservation.” (DEIR, pp. ES-3- ES-5.) Yet, the DEIR’s analysis of alternatives fails both logically and factually to comply with CEQA because it is not supported by fact and does not consider a reasonable range of alternatives, and because it does not adequately compare and evaluate the environmental impacts of the alternatives. When a transmission line or other significant construction component is being examined, alternative routes must be discussed in order to give LAFCo and the public a “reasoned choice.” CEQA Guidelines, §15126.6. Again, LAFCo seeks to avoid this requirement by tiering the review and therefore the DEIR fails to analyze even one route. In addition, none of the alternatives considered even require the construction of the transmission line, yet the fact that these other options will completely avoid a significant environmental impact is hardly mentioned. Despite this major difference in environmental impacts between the project and the various alternatives to the project, including the No Project Alternative, the DEIR rejects all of the alternatives based on the claim that they do not meet the project’s goals and objectives. However, as is described in detail in Section III below, the DEIR’s reliability, rate, customer service and local control analyses are factually flawed and erroneous. As a result, the DEIR cannot justify its rejection of the alternatives. Finally, the DEIR’s analysis of the CAISO and Community Choice Aggregation alternatives is similarly flawed and unsupported.

1. The DEIR must analyze specific alternative routes and sites for the construction components, including without limitation the Woodland-Elverta Transmission Line and the Willow Slough Substation

CEQA requires that the DEIR present “a reasonable range of potentially feasible alternatives.” CEQA Guidelines, §15126.6. Although there is no “ironclad” rule governing the scope of alternatives discussed, under the “rule of reason,” the EIR must

set forth sufficient alternatives “necessary to permit a reasoned choice.” *Id.* As is described above, without looking at specific routes and locations of the Transmission Line and Substation, including specific alternative routes and locations, a “reasoned choice” cannot be made.

In addition, the CEQA Guidelines specify that the alternatives analysis should examine alternative locations. *Id.*, §15126.6(f)(2) (“The key question and first step in analysis is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location.”). In general, alternative locations should be analyzed unless the lead agency concludes that no other feasible locations for the facilities exist. *Id.* Thus, if there is only one feasible route, LAFCo should describe that route and conclude it is the only feasible route. If other routes are feasible, LAFCo should discuss a reasonable range of those alternative routes. The DEIR does neither.

The situation the court addressed in *No Oil, Inc. v. City of Los Angeles*, 196 Cal.App.3d 223, 235-38 (1987) is distinguishable from the present situation. In *No Oil*, the court found that the project proponent did not need to analyze alternative routes for a pipeline. *Id.* However, in *No Oil*, it was uncertain whether the pipeline would be built until commercially viable amounts of oil were actually found. In addition, if a pipeline was needed, the starting point could not have been known until oil was found, and thus alternative routes could not have been meaningfully analyzed. In the instant case though, the Transmission Line will be constructed if the annexation is approved, and the starting and ending points are currently known. In such a case, alternative routes and sites must be examined.

2. The DEIR’s claim that several alternatives do not meet the project’s goals and objectives is based on inaccurate assumptions about rates and reliability

Considering that annexation is the only project which will require major construction activities, such as the Transmission Line, and that most projects do not require the Substation, every alternative to the project considered in the DEIR has significant environmental benefits compared to the project. In each instance, however, the DEIR finds that the alternative does not meet the project’s objectives and goals, including lower rates and improved reliability. However, as described below in Section III, PG&E identifies several significant flaws in the rates and reliability analysis, which contradicts the DEIR’s rationale for rejecting the alternatives. If the alternatives identified will have similar or better rates and reliability, substantially all of the goals and objectives of the project would be met, yet all alternatives would have much less impact on the environment because no transmission line and other construction components would be built in the sensitive areas impacted by the project. The DEIR should address the flaws PG&E has identified in the rates and reliability analysis and the alternatives analysis should be revised and reissued for comment to reflect the new information and corrected analysis.

3. The DEIR's analysis of SMUD annexation with CAISO Service is defective

Alternative #5 to the annexation project considers the merits of proceeding with the proposed annexation, but avoiding the need to construct the new Elverta-Woodland transmission line and associated facilities by keeping the proposed annexation area integrated with the California Independent System Operator ("CAISO") grid. Under this proposal, SMUD would deliver power to customers in the annexation area using existing transmission lines, using the available transmission services of the CAISO, which is the Statewide transmission grid operator endorsed by the California Legislature and California energy policies to manage those lines and other transmission lines throughout the State on a neutral, integrated basis in order to provide reliable electric service for all users. This alternative is discussed at pages ES-8 to 10 and VIII-18 to 23 of the DEIR. The Executive Summary of the DEIR claims that this alternative is technically feasible, but would not meet the objectives of improved system reliability, lower rates, or local control. However, the body of the report admits that this alternative would meet all of SMUD's objectives except lower rates. As to the rates issue, the only material cited in the DEIR, the R.W. Beck Study sponsored by SMUD and discussed below, makes clear that the CAISO option would have only a small impact on costs. More significantly, the DEIR fails to even address the significant environmental benefit of the CAISO alternative, which is avoiding the need to build the Transmission Line and related facilities. Each of these issues is addressed in more detail in this section.

a. SMUD's preferred approach will not result in lower rates than the CAISO alternative

The DEIR summarily concludes: "This alternative would provide most of the program goals *except for lower rates.*" DEIR, ES-8 (emphasis added). It claims that the CAISO alternative would cause "significantly higher costs." However, these statements are at odds with the conclusions of the January 2005 R.W. Beck Report, (Attachment E of the August 1, 2005 LAFCo Application), which is cited in the DEIR on page VIII-20 as the source of this information. On page 3-32, the Beck Report states: "In most cases, the build transmission options are superior to the CAISO service option. None the less, savings are substantial under some of the CAISO options."

As shown on page 3-40 of the Beck Report, the difference in the apparent economic attractiveness of various options that differ only in respect to whether the system would remain integrated with the CAISO grid, is *de minimis* (see scenario 11 vs. 16, or scenario 19 vs. 24):

<u>Scenario</u>	<u>NPV Cost Savings (\$000)</u>	<u>% Cost Savings</u>
11 All Region, Build, High Market	\$21,434	0.97%
16 All Region, CAISO, High Market	\$18,569	0.84%
19 All Region, Build, Low Market	\$133,135	7.15%
24 All Region, CAISO, Low Market	\$134,957	7.24%

Under some of the scenarios studied by RW Beck, the costs would be lower under the CAISO alternative. Thus, the record evidence on costs is directly at odds with the statements in the DEIR.

b. Claimed improved transmission system reliability

The DEIR claims that the CAISO alternative would allow improvements to the distribution system, but will not improve transmission system reliability. As explained in detail in other parts of this response, there is nothing wrong with PG&E's transmission system reliability, and SMUD's plans are to make lower investment in transmission system improvements than already planned by PG&E, as well as moving repair crews substantially further away from these lines.

In addition, the statements in this section of the DEIR are not quantified or explained. For example, the report claims that the CAISO alternative would cause the annexation territory to be subject to CAISO tariff structures, congestion management, and load shed plans, without any explanation of how or why these rules will adversely affect reliability in the annexation territory. Similarly, the DEIR claims that transmission reliability improvements as envisioned in the project "will not occur because this alternative does not reduce multi-terminal lines." DEIR, VIII-19. However, the DEIR does not identify any steps SMUD intends to undertake to accomplish this goal on the Transmission System other than Program Components 4-8, which are designed to separate the SMUD system from the ISO grid. Moreover, SMUD admits that it will be free under this alternative to modify the distribution system as needed to improve any claimed reliability defects.

c. The feasibility analysis lacks evidentiary support

While admitting that the CAISO alternative is feasible, the DEIR claims that it will increase the complexity of SMUD and CAISO control area operations. No quantification of costs is offered. Instead, it merely claims that new processes, procedures, and meters would be required. No effort is made to compare these matters, which many small municipal utilities and investor owned utilities deal with on a regular basis, or how they compare with the impact of building many new transmission lines.

Moreover, it is essential that SMUD coordinate with the CAISO no matter which alternative is chosen. Electricity follows the path of least resistance, not paths based on who owns the lines, and as a result any major transmission upgrade on the CAISO system or the SMUD system must be coordinated with not only both transmission system operators, but with other major utilities in the Western Electricity Coordinating Council. Moreover, it is essential that neighboring control areas communicate early and often with each other, particularly concerning system emergencies. The view that seems to be expressed in the DEIR is that SMUD should be entitled to be an electrical island which does not need to communicate with or coordinate with any other transmission system operators in the area, and that having to deal with the ISO would be an unbearable obstacle. This is simply not true. As the CPUC explained in Resolution E-3952, which

is attached to the DEIR as Appendix F, “we are concerned about the risks posed by fragmentation of the CAISO grid on the reliability of the Western Interconnection” and that Resolution cited to letters sent to the Secretary of Energy by CPUC President Peevey which have previously been provided to this LAFCO. DEIR, Appendix F, at 14. The DEIR got it right in the body of the discussion where it admitted that the CAISO alternative is perfectly feasible. Language suggesting otherwise should be deleted.

d. SMUD’s preferred approach has no “local control” benefits over the CAISO alternative

Except in the Executive Summary, the DEIR admits that the CAISO alternative would meet SMUD’s “local control” objective. In Tables ES-2 and VIII-2 of the DEIR, the DEIR answers the question of whether the CAISO option would meet the “local control” project objective, and both tables answer “Yes,” meaning that this option meets this project goal and objective. Similarly, the detailed discussion in Chapter VIII also admits that the Annexation Area customers would have the same level of local control under the CAISO alternative as it would under the “SMUD builds new lines” alternative. See DEIR page VIII-20. Even though the DEIR complains that SMUD does not want PG&E to own the transmission lines serving the annexation area, it admits that the “local control” objective would be met. The conclusion in the Executive Summary is at odds with the body of the report and should be deleted.

e. Failure to compare and evaluate impacts of the alternatives on the environment

On pages VIII-20 to 21, the DEIR claims to address the comparative impact of the CAISO alternative with the annexation. However, this section does not even mention the fact that the new Transmission Line and associated facilities will not be needed if this alternative is chosen. The Beck Study, at the pages cited in the DEIR, made clear that this line was needed only to allow SMUD to separate itself from CAISO services, and is not otherwise needed. The environmental advantages of not building this line are not even mentioned, and clearly outweigh the minor cost differences that appear in some scenarios.

4. The DEIR’s analysis of Community Choice Aggregation as an alternative to annexation is defective

The DEIR identifies Community Choice Aggregation (CCA) as an alternative to the annexation proposal, but concludes that it is infeasible and would not provide comparable or better rate and service benefits than annexation. The DEIR’s analysis is defective and incorrect. Contrary to the DEIR, there is no evidence that Yolo County and the Cities could not take advantage of the State law authorizing CCA and jointly purchase and sell electricity to customers in Yolo County in lieu of incurring the significant expenses of acquiring PG&E’s facilities outright. The three cities within the proposed annexation area – West Sacramento, Davis and Woodland – can all serve as Community Choice Aggregators, as could Yolo County. The vast majority of the Yolo population resides within the proposed annexation area, so it is unclear how CCA would not serve

the interests of the cities, Yolo County and SMUD. Moreover, the DEIR is similarly defective in concluding that CCA would not provide rate benefits comparable to annexation without providing any analysis demonstrating that this is so. The DEIR's reference to foregone service and reliability benefits under CCA is also defective for the same reasons discussed in these comments regarding comparisons of SMUD and PG&E reliability performance as well as the CAISO alternative.

Moreover, CCA offers the Yolo local jurisdictions more local control over their power purchases and costs than the annexation proposal, because CCA can be undertaken in a way that allows each of the local jurisdictions to directly control and manage its own power purchases for its own citizens, without the risk that a majority of the SMUD Board of Directors may impose operating decisions or costs on one jurisdiction over the objections of its minority representatives on the SMUD Board.

The DEIR must engage in a comprehensive and detailed analysis of the CCA alternative, and PG&E believes such an analysis will demonstrate that CCA provides significantly greater rate, reliability and local control benefits than the annexation proposal.

5. The No Project Alternative and Other Alternatives Provide More Local Control and Input Than the Annexation Proposal

As discussed elsewhere in these comments, the DEIR misstates and omits key facts which demonstrate that the annexation proposal will not provide lower rates or better customer service and reliability than the No Project Alternative and other alternatives evaluated by the DEIR. Nor is there any detailed discussion in the DEIR to rebut the facts submitted by PG&E to LAFCo that demonstrate that SMUD will shift a significant portion of the costs of acquiring PG&E's facilities and serving customers in the annexation area to SMUD's existing customers, contrary to SMUD's stated goal of providing service to the annexation area at no financial cost to existing SMUD customers. Finally, the evidence in the LAFCo record, including the CPUC Advisory Resolution at Appendix F of the DEIR, demonstrates that in fact the SMUD annexation proposal will shift as much as \$439 million (net present value) in costs, or approximately \$43.4 million per year on an annualized basis, to existing PG&E customers, thus belying SMUD's stated goal that the annexation proposal not result in any "material financial cost" to existing PG&E customers.

This leaves only one annexation goal for further comparison with the alternatives: "Ensure local control by Annexation Territory ratepayers over their electric utility." And in regard to this goal, the DEIR also fails to accurately discuss and evaluate the facts. Under the No Project Alternative and other alternatives such as the CCA alternative and the CAISO alternative, customers within the proposed annexation area will retain more, not less, control and public input over their electric rates.

For example, PG&E is directly regulated and subject to oversight by an independent constitutional California agency, the California Public Utilities Commission, which is charged with continuously reviewing and regulating PG&E's rates and services

to ensure that they remain reasonable and in the public interest and meet specified safety, service, and reliability standards.

SMUD's rates and services are totally self-regulated; SMUD is subject to no independent oversight or regulation by any other State entity. Similarly, the members of the CPUC do not represent only one district or geographic area, but the entire State and all utility customers, unlike SMUD's directors, who represent defined geographic areas and therefore can override the interests of customers outside their district by a simple majority vote.

Finally, members of the public and utility customers have specific "due process" and public notice and hearing rights granted them by the California Legislature through enactment of the California Public Utilities Code. As incorporated into the CPUC's procedures, these "due process" rights require prior notice and public evidentiary hearings on major rate and service changes, and ensure that full-time administrative law judges and commissioners themselves hear testimony and develop written records on all major decisions and orders to come before the Commission.

SMUD has no such "SMUD Utilities Code" that guarantees its customers independent oversight and full "due process" for SMUD's rate and service decisions. Thus, the DEIR is flawed in failing to fully evaluate the impacts of the annexation proposal in taking away from customers in the annexed area these important independent oversight and "due process" protections that have existed for over 90 years under the California Constitution and California Public Utilities Code.

G. The DEIR Fails to Meet CEQA's Requirement that the Lead Agency Conduct Independent Analysis and Make a Good Faith Effort at Full Disclosure

The language used in the DEIR demonstrates a lack of objectivity and a predisposed favorable impression of SMUD's service capabilities. On the other hand, LAFCo appears to have a bias against PG&E's capabilities. This bias is apparent throughout the document and results in a DEIR that is legally inadequate because it does not reflect LAFCo's independent judgment and analysis as required by CEQA Guideline §15090. Many sections of the DEIR appear to come straight from SMUD and do not appear to be the result of independent analysis by LAFCo. Accepting SMUD's claims without analyzing their veracity does not meet CEQA's independent judgment and analysis requirement.

An EIR should not be an advertising campaign or a recruiting brochure for the project sponsor. It should provide an objective and neutral evaluation of the significant environmental impacts of a proposed action and must represent the lead agency's independent judgment and analysis. The DEIR's skewed and one-sided presentation of information and unsupported conclusions undermine the document's credibility.

H. The DEIR Improperly Defers Development of the Energy Supply Plan and Associated Impacts Analysis

The DEIR fails to pinpoint a source of energy supply for the more than 250 MW that will be required to serve the customers within the service area. Appendix A does not explain where SMUD will obtain the energy supplies it needs to serve the customers within the proposed Annexation Territory. It is a deferral of an essential part of the project to say that the “energy supply plan” to serve the area will not be developed until *after* the annexation is complete. DEIR, A-4. To say that SMUD “expects to” serve customers through “a combination of new short and long term power contracts, spot market purchases, customers owned generation and new renewable power supply” is not sufficiently specific to be able to assess (a) whether SMUD even has a reliable source of electricity, or (b) what environmental impacts may arise by such new contracts or new sources. To wait to assess the impacts of developing such new sources until after the annexation has been approved is a clear violation of CEQA’s prohibition on deferral of environmental analysis. *Stanislaus Natural Heritage*, 48 Cal.App.4th at 194-206 (EIR inadequate due to failure to identify source of water for later phase of project). SMUD needs to develop its “energy supply plan” now.

I. SMUD, Not LAFCo, is the Proper Lead Agency

The CEQA statute and the Guidelines demonstrate that SMUD, not LAFCo, is the proper lead agency. When a public agency will carry out the project, that agency “shall” be the lead agency. CEQA Guidelines § 15051(a); *see also* Pub. Res. Code § 21067 (the lead agency is the agency with “principal responsibility for carrying out or approving a project”). “Shall” is mandatory. CEQA Guidelines § 15005(a). The “project” is the “whole of the action” and not each separate approval (CEQA Guidelines § 15378(a)), so the “project” for purposes of determining the lead agency includes not just the decision of whether to annex, but also the specific projects that will result, such as construction of the Transmission Line and Substation. In addition, when multiple agencies are involved with a project, it is essential that the correct agency acts as the lead agency, and the wrong lead agency can render the EIR inadequate. *Planning and Conservation League v. Department of Water Resources*, 83 Cal.App.4th 892, 906-07 (2000).

SMUD is the agency “carrying out” the project. SMUD designed the terms of the annexation proposal, it is the agency seeking the annexation, and if approved, SMUD will construct the necessary facilities, including the Transmission Line and Substation, acquire facilities from PG&E in the annexed area, and ultimately deliver electricity to customers in the annexed territory. LAFCo’s role, on the other hand, is limited to reviewing the proposed annexation to determine whether it meets certain prescribed statutory standards. LAFCo played no role in designing the annexation proposal, its ability to define the annexation is limited to imposing conditions of approval, and, if approved, LAFCo will have no further role in carrying out the project. SMUD has the “principal responsibility” for the annexation and should be the lead.

Evidence for why SMUD is the proper lead agency is found within the DEIR itself. For example, LAFCo proposes to delegate mitigation monitoring responsibility to

SMUD. DEIR, Appendix E, E-1 (noting that SMUD will have “final oversight authority” over mitigation monitoring). Mitigation monitoring is a role the lead agency is required to play.⁵ By delegating this responsibility to SMUD, LAFCo implicitly recognizes that SMUD should be the lead agency. In addition, the DEIR recognizes that SMUD is the agency with the necessary expertise to evaluate the impacts of the provision of electrical service. DEIR, ES-3 (recognizing that SMUD has expertise on electrical service).

J. The Blanket Approach of Labeling All Significant Impacts as Cumulative is Not Permitted Under CEQA

The DEIR concludes that, to be conservative, it will find all of the project’s environmental effects to be cumulatively significant; however, it does not provide any analysis or quantification of the impact. This attempt to find a “safe harbor” for impacts by simply labeling them significant without detailed analysis has been rejected by the courts. In *Berkeley Keep Jets Over the Bay Committee v. Board of Port Commissioners of the City of Oakland*, 91 Cal.App.4th 1344, 1370-71 (2001), the Port of Oakland argued that the absence of a health risk assessment of impacts from toxic air contaminants could be excused because the Port found the impacts to be significant but overriding considerations warranted proceeding with the project anyway. The court rejected this argument, finding that even if the impact is significant and unavoidable, an EIR must be prepared that “sufficiently explores” the impact created by the project. “The EIR’s approach of simply labeling the effect ‘significant’ without accompanying analysis of the project’s impact ... is inadequate to meet the environmental assessment requirements of CEQA.” *Id.*, 1371.

The DEIR’s cumulative impacts analysis attempts to “travel [this] legally impermissible easy road to CEQA compliance.” *Id.* The approach violates CEQA because the EIR “treats each and every environmental effect of the Program as cumulatively significant,” without providing any analysis of what the cumulative impacts would be and whether they can be mitigated. DEIR, V-8. According to *Berkeley Keep Jets*, this approach does not fulfill the lead agency’s obligation to “use its best efforts to find out and disclose all that it reasonably can” as required by CEQA Guidelines §15144.

The DEIR tries to disguise this lack of analysis as a “conservative” approach that “fully discloses” all effects to local residents. But a one-size-fits-all approach of labeling everything significant and unavoidable hardly helps anyone to analyze the impacts of the project. Instead, the DEIR must provide a summary of the expected environmental effects to be produced by the projects and reasonable, feasible mitigation options. CEQA Guidelines, §15130(b)(4)-(5).

1. The DEIR Fails to adequately analyze cumulative impacts relating to planned O’Banion-Elverta Transmission Line

The DEIR notes that WAPA plans to construct a 230-kV transmission line from the O’Banion substation to the same Elverta substation where the Transmission Line will

⁵ See Section II.K below for analysis of this impermissible delegation.

terminate. This proposed line will cross a portion of the Transmission Line Study Area and a portion of the O'Banion line will be built in close proximity to the SMUD Transmission Line. DEIR, V-6. Despite the fact that it is reasonably foreseeable that there will be two transmission lines in close proximity, the DEIR hardly mentions this in the individual cumulative impacts analysis sections. For example, the Aesthetics section makes no mention of this additional line even though the O'Banion line is planned to cross the Transmission Line Study Area and once completed both lines would likely be visible at the same time. Cumulative impacts analysis in an EIR must analyze similar other projects that are in the same geographic area that have similar impacts. CEQA Guidelines, §15130(b). The O'Banion line clearly meets these criteria, yet it is hardly mentioned. The DEIR is defective as a result.

The only individual section where it is mentioned is the Land Use/Planning section, and the DEIR concludes that because the SMUD Transmission Line will have "no direct or indirect land-use impacts, it would not cumulatively contribute to potential land-use impacts associated with the proposed WAPA transmission line." *Id.* But when examining cumulative impacts, the fact that the proposed project alone will not be significant wholly misses the point; the DEIR must examine the effects of both transmission lines "when considered together." CEQA Guideline §15355. This section has no analysis of whether the two lines considered together will impact land use and planning.

K. The DEIR Impermissibly Delegates the Mitigation Monitoring Responsibility to SMUD

The Mitigation Monitoring and Reporting Program contained in the DEIR impermissibly delegates responsibility for final oversight authority over mitigation monitoring to SMUD. As the lead agency, this is LAFCo's role and it may not be delegated. According to CEQA Guideline §15097, "until mitigation measures have been completed the lead agency remains responsible for ensuring that implementation of the mitigation measures occurs in accordance with the program." According to the DEIR, SMUD or its contractor will have "final oversight authority" over the mitigation monitoring program. DEIR, Appendix E, E-1. If LAFCo acts as the lead agency,⁶ LAFCo must fulfill this critical lead agency oversight responsibility and cannot pass it on to SMUD.

L. Failure to Use Airport Land Use Planning Handbook

CEQA directs that when an agency is faced with a proposed project within the boundaries of a comprehensive airport land use plan, the agency shall use the Airport Land Use Planning Handbook to assist in the preparation of the EIR. CEQA Guidelines §15154. According to the map on the Airport Land Use Commission's website, sections of the Study Area are within the area covered by the Sacramento International Airport (Former Sacramento Metropolitan Airport) Comprehensive Land Use Plan. *See* <http://www.sacog.org/airport/maps/International.pdf>. Contrary to CEQA, the DEIR fails

⁶ PG&E submits that SMUD should be lead agency, not LAFCo. *See* Section II.G.

to utilize the Airport Land Use Planning Handbook when evaluating potential airport hazards.

M. DEIR Does Not Separately Identify Significant Irreversible Impacts

Chapter VII of the DEIR purports to comply with the requirements under CEQA Guidelines §15126.2(b) and (c) that it describe all significant environmental effects which cannot be avoided and examine irreversible environmental impacts. Chapter VII simply lists all significant and unavoidable impacts. Not only does it fail to examine the irreversible impacts, it does not even identify which impacts it considers irreversible. The CEQA Guidelines differentiate irreversible impacts from other significant impacts and require that an EIR prepared in relation to a LAFCo resolution must evaluate these types of impacts separately. CEQA Guidelines §§15126.2(c), 15127. A listing of all unavoidable significant impacts fails to meet this requirement.

A decision to change electric service suppliers from PG&E to SMUD commits future generations to an energy supply mix that is not easily undone. Before going down this path, LAFCo must separately identify the irreversible changes that will ensue.

III. THE FACTUAL ANALYSIS OF THE ANNEXATION IS BASED ON FLAWED FACTUAL ASSUMPTIONS WHICH MISSTATE FACTS OR OMIT MATERIAL FACTS

A. Rate Impacts

There are a number of instances where the DEIR accepts, without question or analysis, SMUD's claims that customers in the annexation territory will see rate decreases and no degradation of public services under SMUD service compared to PG&E's rates, and that existing SMUD customers will not incur any additional costs for the annexation (e.g., see Chapter II, Sections 3 and 5; Chapter VIII.A.1.b, 5, 7).

However, contrary to the DEIR and based on the facts and data provided by PG&E to LAFCo in a comprehensive September, 2005, report and extensive accompanying data prepared at LAFCo's request, electric rates to Yolo customers will go up significantly if SMUD takes over PG&E's facilities and service as proposed in the annexation application. Depending on the time period over which the acquisition costs are recovered, the evidence submitted to SMUD demonstrates that SMUD's surcharged electric rates to Yolo customers will be more than 10 percent and as much as 20 percent or more higher than PG&E's rates if SMUD were to begin serving Yolo customers in 2008.⁷ The only way SMUD can reduce this increase is if it raises rates to its existing SMUD customers in Sacramento County.

⁷ PG&E Report to Sacramento LAFCo Regarding SMUD's Proposed Annexation within Yolo County, dated September 16, 2005, revised September 28, 2005 ("PG&E Report") Volume 1, pages 73- 75. PG&E is preparing an update and supplement to this report at LAFCo's request, and will submit the updated report as additional comments on the DEIR in the near future. PG&E does not expect that the conclusions in these comments regarding the projected rate impacts and acquisition costs for the annexation project will change materially.

The evidence before LAFCo also demonstrates that SMUD must acquire PG&E's facilities at fair market value in order to serve Yolo customers, and SMUD also must buy large amounts of natural gas to support the additional power it must purchase or produce to serve those customers. PG&E's analysis submitted to LAFCo indicates SMUD has underestimated the cost to acquire PG&E's facilities by \$435 million because SMUD's inventory of PG&E facilities is incomplete,⁸ SMUD undervalued the facilities it did include, and because SMUD is using the wrong appraisal method for "fair market value." Specifically, SMUD has based its estimated value on the original cost of the facilities, less depreciation, or "book value."⁹ As PG&E's September, 2005, response to LAFCo's data request demonstrates, original cost is not an accepted means of representing fair market value—it is not even close to market value. SMUD in its annexation application is proposing to pay far less than fair market value under an appraisal method for which it cannot cite a single example of use in a contested takeover case such as this.

PG&E has used replacement cost new less depreciation ("RCNLD"), which is an accepted means of representing fair market value, and which PG&E and public agencies have used as a basis for recently negotiated sales. In fact, when SMUD acquired PG&E's facilities in Sacramento County many decades ago, it was at greater than RCNLD, not original cost less depreciation or book value.¹⁰ More recently, when SMUD acquired PG&E's Folsom facilities, it did not acquire them at original cost less depreciation, but rather it acquired them at significantly more than that.

Beyond this factual inaccuracy in the DEIR regarding acquisition cost for the SMUD annexation, there are a number of other deficiencies in the DEIR's reference to SMUD's estimated future rates, as PG&E discussed in detail in its September, 2005, submission to LAFCo.

PG&E's analysis indicates SMUD assumes it will be able to buy gas to serve Yolo beginning in 2008 at less than \$5.00 per MMBtu.¹¹ But natural gas is currently costing far more than that for future deliveries, significantly higher than what SMUD is assuming.

While SMUD may assert that PG&E's rates are similarly impacted by gas price changes, PG&E had demonstrated that its diverse portfolio of resources provides a much better hedge against higher gas costs than SMUD's. SMUD's claims that PG&E's electric rate increase for 2006 demonstrates that PG&E's rates are more closely tied to gas prices is similarly incorrect; in fact PG&E's 2006 rates include a mix of \$10 and \$11 per MMBtu gas in our forecast for 2006 rates, whereas SMUD has not adjusted upward the less than \$5.00 per MMBtu it assumes for 2008 in its annexation application.

In addition to higher gas prices, the DEIR fails to analyze the impacts of Yolo low income and low usage customers losing one of the most important electric rate

⁸ PG&E Report, Volume 1, page 38 and attached Black & Veatch report.

⁹ SMUD Application, July 29, 2005, p. 4, fn. 5 and p. 13.

¹⁰ Railroad Commission Decision (D.) 35985, 44 CRC 467 (1942).

¹¹ PG&E Report, Volume 1, page 51, Table 5.

protections enacted by the Legislature in recent years if the annexation is approved.¹² This protection applies only to investor-owned utilities and not SMUD. This protection prevents PG&E from raising rates to residential electric customers on 130% of the “baseline quantities” of electricity they use. If the SMUD annexation is approved, low income and low usage customers will lose this legislatively granted “rate cap” protection. The DEIR fails to analyze the adverse economic and environmental justice impacts of this loss of rate protection to low income and low usage customers.

Furthermore, SMUD has promised the Yolo cities and Yolo County that SMUD will enter into agreements to make up the loss of tax revenues and fees for public services that PG&E pays each year to these local government entities.¹³ PG&E has demonstrated that these lost tax and franchise fee revenues would be more than \$2 million per year to Yolo cities, special districts and the County,¹⁴ and that the amount is growing. But the annexation proposal does not contain and therefore the DEIR fails to analyze any specific proposal by SMUD, the Cities or Yolo County to put a utility user tax on the ballot to make up the lost taxes and fees, and there is no other way for SMUD to make up the losses without further violating its pledge to not increase the rates of existing SMUD customers as a result of the takeover. Furthermore, the proposed “agreements” would put the local jurisdictions’ revenues at risk because they would not be legally-enforceable.

The DEIR must discuss and analyze these electric rate and public service impacts fully and objectively, and may not simply “cut and paste” analysis and estimates from SMUD’s annexation application. Moreover, the DEIR is procedurally defective and premature in its discussion and analysis of the rate and economic impacts of the SMUD proposal, because LAFCo itself has retained its own consultants to assist in undertaking a separate analysis of the projected costs of SMUD’s acquisition of PG&E’s facilities under the annexation proposal, and any DEIR discussion and analysis of rate impacts is premature and unsupported until that separate LAFCo analysis is complete.

B. The DEIR’s Electric Service Reliability Analysis is Defective and Erroneous

Section D of Chapter II of the DEIR refers to the first goal of the annexation as follows: “Improve the Reliability of Electric Service in the Annexation Territory.” The discussion that follows is relatively brief, and simply concludes that SMUD service is superior to that of PG&E based on a table presenting System Average Interruption Duration Index (“SAIDI”) and System Average Interruption Frequency Index (“SAIFI”) statistics for SMUD and PG&E for the year 2003.¹⁵ Attachment K to the SMUD Application provides additional discussion on reliability that is equally cursory and one-sided.

¹² California Water Code section 80110.

¹³ SMUD Resolution 05-05-08, May 19, 2005, section 10 and Attachment B.

¹⁴ PG&E Report, Volume 1, pages 64- 68.

¹⁵ As noted in the Draft, SAIDI is defined as the System Average Interruption Duration Index, while SAIFI is defined as the System Average Interruption Frequency Index

The DEIR's claim of SMUD's superior reliability is based upon misleading comparisons of system level SAIDI and SAIFI, and false conclusions regarding different design practices. First and foremost, comparisons of reliability statistics among utilities are notoriously misleading. It is well understood within the industry that utilities do not calculate SAIDI and SAIFI similarly, introducing error into any comparison between organizations.¹⁶ However, even were such comparisons accepted, Table II-1 of the DEIR uses information for PG&E that covers a significantly broader territory than the proposed annexation area, thus comparing areas with different customer density and service territory geography which has a huge impact on SAIDI and SAIFI, and distorts the comparison. Furthermore, the draft considers only one year – 2002¹⁷ – as opposed to developing an average over an extended period of time. Finally, while the DEIR references a SMUD commitment to improve the reliability in the proposed annexation area (ironically, to levels that PG&E has already surpassed – as shown below), it is more likely that reliability will deteriorate in the short term as well as the long term given that 1) SMUD is totally unfamiliar with the circuits currently under PG&E control; 2) SMUD only has one service center for outage response, whereas PG&E currently has three; and 3) SMUD is budgeting substantially less for capital upgrades than PG&E has historically spent and is forecasting over the study timeframe.

1. Reliability Comparisons Among Utilities

In Attachment K to SMUD's Application for Annexation, SMUD makes the statement that "the utility industry has agreed on several indices to measure the reliability of an electric system" and "comparison to other utilities is another method to measure the reliability of an electric system." Application for Annexation, SMUD, July 29, 2005, Attachment K, at 1. PG&E agrees that SAIDI and SAIFI can be used to measure the reliability of an electric system, as well as changes over time within a given system. However, as noted by a number of authorities, including the CPUC and IEEE, comparisons across utilities are without merit.¹⁸ This is due to a number of factors, including differences in 1) geography; 2) step restoration (which impacts when the end of an outage is reported); 3) the systems used to do the calculations; and 4) what is reported (some utilities only report circuit breaker outages and ignore recloser and fuse outages).

PG&E's service territory is dramatically different from SMUD's. PG&E serves 5,370,000 customers over a 71,336 square mile area which includes vast expanses of rural Northern California with rugged mountain terrain, forests, and the California

¹⁶ For a discussion of the problems with comparisons, see *A Nationwide Survey of Recorded Information Used for Calculating Distribution Reliability Indices*, IEEE Transactions on Power Delivery, Vol. 18, No. 2, April 2003.

¹⁷ Table II-1 of the DEIR refers to year 2003 data, although the data presented for PG&E is 2002 and the year for SMUD is uncertain since it doesn't match up with the data in Appendix K from the Application.

¹⁸ The CPUC made the following observation in Decision 96-09-045: "As we have found in previous decisions, it is not particularly useful to compare utilities with different customer counts, different geography and weather patterns, different system configurations, not to mention different methods of calculating SAIDI, SAIFI, and MAIFI. Given these factors, it is extremely unlikely that any two utilities would ever achieve similar performance results; therefore, we are reluctant to place much faith in such comparisons. We believe that the more appropriate comparison to make is a comparison between PG&E's historical performance and its current performance."

coastline. While PG&E provides service in many urban areas, the overall density of its customer base is only 75 customers per square mile. In contrast, SMUD's service territory is flat and is primarily an urban and suburban environment. According to SMUD's website, it provides service to 553,337 customers in a 900 square mile area. The overall density of SMUD's customer base is thus 615 customers per square mile – a customer density eight times that of PG&E.

However, even within PG&E, the customer density and service territory geography have a huge impact on SAIDI and SAIFI. Electric system reliability performance is typically better in more densely populated urban and suburban areas than it is in less densely populated rural areas. On a per-customer basis, urban and suburban electric systems are more compact and have less exposure to the elements. In addition, urban and suburban systems include a higher percentage of underground cables which typically result in better electric system reliability when compared to entirely overhead systems.

In Attachment K, SMUD states that “For years 2003 and 2004, PG&E’s duration index was double SMUD’s average duration.” *Id.* SMUD further states that the difference between the two utilities can be attributed to overhead and underground design strategies. This attribution is baseless as it ignores the true difference between SMUD and PG&E: SMUD’s service area is almost entirely a *flat, urban and suburban environment* and PG&E’s is not. PG&E’s design “strategy” is essentially the same as SMUD’s in high-density areas. Both have strong mainline circuit ties and backties for planned and unplanned outages, which is industry standard design in most urban/suburban distribution systems. PG&E has also used load break elbows in its system design for past 10 years contrary to statements in Attachment K. *Id.* at 1-2.

2. Sacramento Division vs. Proposed Annexation Area

Table II-1 of the DEIR presents the following comparison:

Table 1

PG&E and SMUD (2003) Outage Duration and Frequency, Including Major Events

	SMUD	PG&E
SAIDI	97 minutes	280 minutes
SAIFI	1.3 per year	1.7 per year

Even if the calculations were performed exactly the same way, the comparison is meaningless since the DEIR is comparing SMUD’s statistics versus that of PG&E’s Sacramento Division, not the proposed annexation area. The proposed annexation area is significantly denser than Sacramento Division as shown in Table 2 below. The customer density in Sacramento Division is only 66 customers/square mile whereas the density in

the proposed annexation area is 331 customers/square mile. As Table 2 shows, the customer density, and percentage of underground facilities are much greater in the proposed annexation area than for Sacramento Division. Both factors tend to result in lower SAIDI and SAIFI, all other things being equal.

Table 2

Comparison of Sacramento Division with the Proposed Annexation Area

	Customers	Sq Miles ¹⁹	Overhead Miles	Underground Miles	Total Miles	% Underground	Customers/Sq Mile
Sacramento Division	208,000	3146	5,103	1,346	6,449	20.8%	66
Proposed Annexation Area	70,000	211	584	353	937	37.6%	331

The proposed annexation area (Davis, West Sacramento, Woodland, and unincorporated areas in between) is about 50% as dense, from a customer per square mile standpoint, as SMUD's existing service territory. Nonetheless, this area is more similar to SMUD's service territory than is the entirety of Sacramento Division.

Within the PG&E system there are areas that are similar in character to SMUD's service territory. For example, PG&E's Mission Division serves 376,000 customers in a 700 square mile area. Mission Division encompasses portions of Alameda, Contra Costa, San Joaquin, Santa Clara and Stanislaus counties in a primarily urban and suburban environment. This includes the communities of Hayward, Fremont, Pleasanton and Livermore. The customer density in Mission Division is 537 customers per square mile which is much more comparable to SMUD than an overall PG&E system or annexation area comparison.

Table 3 shows the relationship between customer density, SAIDI, and SAIFI for 2000-2004 comparing PG&E (System), PG&E (Mission Division), PG&E (Sacramento Division), PG&E (Annexation Area) and SMUD. The PG&E data includes major events. Please note that the annexation data includes the indices for the three cities, which encompass approximately 90% of the customers. Historical indices for the unincorporated area are not available.

¹⁹ Excludes SMUD's service territory

Table 3

Comparison of Different PG&E Areas with SMUD

Organization	Customer Density (Customers per sq. mi.)	2000-2004 Average SAIDI (Minutes per customer)	2000-2004 Average SAIFI (Interruptions per customer)
PG&E – System	75	238.7	1.466
PG&E – Mission Division	537	87.2	1.069
PG&E– Sacramento Division	66	219	1.335
PG&E – Annexation Area	331	139.5	0.937
SMUD	615	89	1.31

Notwithstanding the reasons noted earlier as to why inter-utility comparisons are not relevant, the data show that in an area where PG&E’s service territory is comparable in density to that of SMUD, PG&E reliability is slightly better than SMUD’s in terms of duration (SAIDI) and substantially better in terms of frequency (SAIFI).

This table also demonstrates that customers located within the annexation area also experience substantially better reliability than the “average” PG&E customer, and that the SAIFI results are substantially better than SMUD’s. Finally, Table 3 provides a 5-year average, which is a much better predictor of future performance than drawing conclusions from a single year, as the DEIR attempts to do.

3. SMUD’s Reliability “Commitments”

SMUD claims that reliability will improve in the annexation area after a five year transition period. Ironically, SMUD’s “commitment” sets a target that is worse than the existing statistics achieved by PG&E in the proposed annexation area. Specifically, SMUD sets its targets on 140 minutes for SAIDI, and 1.4 interruptions per customer SAIFI. As Table 3 demonstrates, PG&E’s current performance for 2000-2004 is superior to SMUD’s five-year target.

Furthermore, while five years may give SMUD enough time to learn PG&E’s existing circuits and system such that SMUD is no longer at a severe disadvantage in running an unfamiliar system, it does not address the potential impact the annexation may have on the ability to respond to power outages within the service territory for at least two reasons.

First, SMUD’s analysis did not include any costs for a new service center. Thus, SMUD is apparently planning for its outage response center to remain in its current location, its service center located off Highway 50 in Sacramento. In contrast, PG&E currently has three response centers located within the proposed annexation territory (Woodland, Davis and Sacramento). Because SMUD’s response center is further away

from the majority of the annexation area than PG&E's current response centers, the annexation will result in increased outage response time.

For example, an outage problem located in Woodland is only a 5 minute drive away from PG&E's response center. However, this same outage problem is approximately a 40 minute drive from SMUD's closest response center. Moreover, the trip from SMUD's closest response center to the annexation area requires travel over highways and through interchanges that are often congested with traffic, further delaying response time.

Second, the smaller size of SMUD's operation will result in fewer options and less flexibility in the case of widespread outages in the annexation area. Since PG&E has three service centers in the area to draw on, along with the ability to draw on service employees from throughout its system, it can respond quicker. These multiple service centers provide PG&E with the capability to pool its resources to respond to widespread outages rapidly and efficiently.

Finally, beyond the acquisition date, PG&E expects that it would have continued investing approximately \$9 million per year in 2004 dollars, increasing according to load growth and inflation. This is consistent with its historical investment patterns in this area. In contrast, SMUD estimates are well below those of PG&E, and represent either an erroneous understatement of costs, or present the risk that SMUD will underinvest in the system, thus jeopardizing reliability.²⁰

C. The DEIR's Analysis of Impacts to Utilities, Service Systems, Energy Conservation, and Renewable Energy is Flawed

The DEIR misrepresents or fails to fully analyze the impact of annexation on the average energy use of the residents in the annexed area. The DEIR creates the false and misleading impression that average energy use would not be affected by the Annexation and might even decrease. In fact, average energy use is likely to be higher if the annexation proceeds than if PG&E continues to serve its customers in Yolo County.

The DEIR discusses three areas in its examination of impacts: demand response, energy efficiency and conservation. In all three areas, the DEIR misrepresents the effects of Annexation. Specifically, the DEIR concludes that SMUD is more likely than PG&E to promote the environmentally clean consumption and production of electricity within the proposed Annexation area by relying on one-sided and misleading representations of the respective utilities' programs, capabilities and resources. In addition, the DEIR fails

²⁰ Using SMUD's estimate of approximately 1,400 additional customers added per year (Appendix D, SMUD Staff Final Report, April 18, 2005) and Beck's cost of \$1720 per new customer (P 1-63 Beck Final Report January 2005), the cost of serving new customers alone would be approximately \$2.4 million/year. This leaves a low amount of \$0.9 million per year for replacements and renewals for the annexation area. There is no reason that SMUD's ongoing capital costs would be less than PG&E's, with the exception of the fact that SMUD would be able to finance its investments using tax-exempt debt. Capital needs to accommodate load growth should be the same for both utilities. Capital costs to hook-up new customers should be approximately the same, since both utilities have reasonably comparable line extension cost formulae for new business.

to describe and evaluate the renewable energy programs offered by PG&E that will not be available to customers in the annexation area under SMUD.

1. Demand Response

The DEIR downplays PG&E's demand response capabilities by misrepresenting concerns expressed by the CPUC, and juxtaposes this mischaracterization with SMUD's Peak Corps Program. In short, the DEIR is misleading on several counts. The facts tell a different story.

The estimates of PG&E's capabilities referenced in the DEIR – 1,100 MW estimate for system-wide demand reduction – are for 2005.²¹ The DEIR fails to evaluate ongoing CPUC efforts to increase emphasis on demand reduction as a tool to meet the energy needs of California. Specifically, the DEIR fails to take into account PG&E's ongoing implementation of a menu of demand response programs to achieve the CPUC mandated goal of 5% "price-based" demand response by 2007. Furthermore, it should be noted that the 5% figure does not include the 320 MW reduction from reliability focused demand response programs like PG&E's E-BIP and Nonfirm programs.

Surprisingly, the DEIR also fails to take into account PG&E's AMI efforts, which will result in the system-wide installation of real-time metering equipment with the capability to implement demand response on a much more widespread and reliable basis. The Yolo Communities have intervened in PG&E's AMI proceeding, arguing that PG&E should not install AMI meters in the proposed annexation area pending the outcome of the Yolo vote. This testimony argues that SMUD's Peak Corps program is a suitable demand response substitute, but offers no analytic support for its position.

The DEIR points out that the 156 MW of SMUD's Peak Corps Program has been recently validated. By juxtaposing this validation with implication that the CPUC doubts PG&E's demand response capability, the DEIR implies that SMUD tests its demand response and PG&E does not. In fact, PG&E regularly tests or operates its demand response programs several times each year (SMUD apparently validated only once). What the DEIR fails to point out is that only 156 MW of its claimed capability of 225 MW was actually validated. Furthermore, SMUD has not validated how much of the 24 MW of contracted demand response or the 45 MW of its voluntary curtailment program would in fact be available if needed. In addition, the DEIR fails to take into account that SMUD lost much of its AC cycling participation during the energy crisis. Accordingly, there is no foundation for the DEIR's implication that SMUD's 225 MW of demand response capability is more likely to be available than PG&E's estimated 1,100 MW.

In addition to the drop-out rate during the energy crisis, SMUD's Peak Corp program is probably overvalued. Generally, A/C programs will cycle compressors at a specific rate (based on SMUD's description on their web-site, it looks like 30 minutes per hour, 40 minutes per hour and fully off). Only a fraction of the "validated" amount can actually be relied on for resource adequacy purposes because of the cycling. The 156 for

²¹ Actually, PG&E's reported demand response subscription is closer to 820MW.

the Peak Corp program is probably their subscription, not the reliable coincident load drop. PG&E, on the other hand, must incorporate its Demand Response programs into its resource adequacy filings. Therefore PG&E's DR numbers reflect coincident load drop, not just the estimated subscribed amount.

The DEIR clearly states that the estimated demand response in the annexation area will be 13 MW, or 5% of the peak in that area. DEIR, IV-195. In fact, the total demand reduction in the annexed areas – 5% as stated by the DEIR – would be less after annexation than PG&E's expected demand response of 7% in 2007.²²

The DEIR very carefully words its conclusion to compare SMUD's future with a misleading downgrade of PG&E's current demand response capabilities when it says: "SMUD has more potential than PG&E currently has to provide predictable peak demand reduction for the proposed Annexation Territory." Such a comparison is inherently flawed and lacks foundation. A proper comparison would evaluate PG&E's projected demand response capabilities in the annexation area with SMUD's projected demand response capabilities in the annexation area. The best available evidence demonstrates that, in the future, demand response capabilities in the subject territory will be higher under PG&E service than it would be if SMUD were to annex the territory. No foundation exists for a contrary conclusion without resorting to the improper and inaccurate comparisons contained in the DEIR.

2. Energy Efficiency

The DEIR does recognize that PG&E will increase spending on energy efficiency from 2006 on, but goes on to dismiss consideration of this critical fact with the statement "no current data are available on the timetable and type of programs that will be implemented." It (naturally) prefers to rely on historical data as the "best available." Contrary to the impression the DEIR would like to create, PG&E's past and future commitment to energy efficiency is well documented. PG&E spent 2.2% of gross revenue in 2004 on energy efficiency programs and its energy efficiency commitment will more than double by 2008. PG&E will spend \$935 million during those years to procure energy efficiency. More than half of this funding is in addition to the traditional energy efficiency funding mandated by the same statute that sets SMUD's energy efficiency spending requirement.

PG&E has partnered with its customers for over 29 years, helping them manage their energy needs.²³ PG&E's leadership in energy efficiency has been recognized by government agencies and environmental groups. The DEIR mentions three awards

²² PG&E's CPP, DBP, BEC and CPA-DRP programs are expected to achieve 5% of peak demand with roll-out of AMI. Non-Firm and E-BIP will achieve an additional 2%

²³ Since 1975, PG&E's energy efficiency programs have resulted in lifecycle savings of 156,218 GWh of electricity, 11.9 billion therms of gas, and emissions avoidance of 47 thousand tons of NOx, 28.7 thousand tons of SOx, and 81.7 million tons of CO2. By 2004, demand from PG&E's customers was over 1300 MW lower than it would have been without these energy efficiency programs. The energy efficiency achieved through these programs has been a significant factor helping California achieve per capita energy use that is among the lowest in the nation.

SMUD has achieved for environmental or energy efficiency programs; Exhibit A lists over 75 awards PG&E has received since 1991. PG&E's programs regularly serve as models for utilities throughout the country, including SMUD, which based its commercial new construction program on PG&E's Savings By Design program.²⁴

As detailed in Exhibit B, P&GE provides a greater range and richer portfolio of energy efficiency opportunities for its customers than does SMUD. PG&E provides rebates for over 40 energy efficient technologies – in addition to a rebate program that lets customers design their own energy efficiency choices. PG&E has partnered with the California Energy Commission to make sure our Codes and Standards Programs act as a critical precursor to major building and appliance standards upgrades. PG&E maintains three energy centers that provide classes, building and technology analysis, diagnostic testing, and demonstration projects for customers, architects, contractors, and manufacturers.

Without providing any source, the DEIR includes a table purporting to compare per capita spending on energy efficiency by PG&E and SMUD. In fact, PG&E's research indicates PG&E spent more on Public Purpose Programs in 2004 than did SMUD. P&GE is unable to duplicate the figures presented in the DEIR, but does note the table fails to include projected spending. PG&E has no idea how SMUD arrived at the figures in Table IV.M-6, but the correct figures for PG&E are in Table 4, below. We note that SMUD is always wrong and always underestimates PG&E spending on energy efficiency. Assuming, arguendo, that the SMUD calculations for its own programs are correct, the figures for the 2006-2008 period would be SMUD - \$16 per capita and PG&E \$20.

**Table 4:
PG&E's Per Capita Spending on Energy Efficiency**

Years	SMUD Estimates for SMUD	SMUD Estimates for PG&E	Accurate Figures for PG&E
1991-1996	\$33	\$10	\$11
1997-2003	\$17	\$9	\$14
2004-2005	\$16	\$12	\$15
2006-2008	Omitted	Omitted	\$20

It is understandable that the DEIR would draw focus away from future commitments to energy efficiency, since PG&E will invest so extensively in energy

²⁴ PG&E also assists other utilities with education and training. PG&E held a Pool Pump Program training class for SMUD employees and pool professionals that work in Sacramento. SMUD modeled its Quality Installation Standards around programs already launched by PG&E. SMUD adopted PGE's statewide HVAC specifications and included them in its 2003-2005 programs.

efficiency in the 2006-2008 time period. However, the future is the time period of most relevance to determining environmental impacts of the proposed annexation – thus the DEIR fails to fulfill its purpose.

In the 2006-2008 time-frame, PG&E will be investing more per capita for energy efficiency than SMUD intends at this time. Unless SMUD “voluntarily” increases spending on energy efficiency (which can be withdrawn at any time by SMUD), customers in Yolo County will be better off if they continue to be customers of PG&E. Even if SMUD increases spending, history indicates fewer programs will be offered and innovation will lag behind PG&E (and even then, it will likely be based on PG&E programs).

3. Energy Conservation

The DEIR discussion of energy conservation briefly addresses the fact that lower prices tend to lead to higher consumption. PG&E believes that prices will not decrease following annexation and are likely to increase. That being said, SMUD’s rationale for dismissing simple economic theory is based on the purported success of SMUD’s demand response and energy efficiency programs. As discussed above, there is no evidence that SMUD’s demand response programs are more successful than PG&E’s and every indication that in the future, PG&E’s programs will provide higher load drop. Further, all indications are that PG&E’s future energy efficiency will deliver more savings, provide wider customer choices and more innovation – just as it has in the past. Irrespective of whether the cost of electricity increases or decreases for Yolo County customers should annexation proceed, per capita energy consumption will almost certainly be higher under SMUD than it would be under PG&E.

4. Renewable Energy Procurement

The DEIR accurately compares PG&E’s and SMUD’s projected percentage of renewable energy resources and shows that PG&E’s is higher. The DEIR also accurately points out that PG&E expects to reach the State goal of 20% renewables sooner than SMUD. What the DEIR does not discuss is that PG&E will achieve its RPS goal under the oversight of the CPUC, while SMUD is responsible to no one for any failure to achieve its stated goals. The DEIR also omits the ongoing discussion before the CPUC regarding accelerating the RPS goal to 33% by 2017. Should the CPUC adopt an accelerated RPS, PG&E will achieve a much higher percentage of renewable energy resources than will SMUD over the next decade.

On May 11, 2004, the California Municipal Utilities Association sent a letter to Assembly Member Sarah L. Reyes. The letter included detailed information about the SMUD existing and planned renewables as of February 24, 2004. There appear to be several discrepancies between the information supplied by CMUA and the information that should be represented in the Power Content Label SMUD provides its customers every year. First, the CMUA information included “PAC Green Tickets”, which indicates that SMUD plans to meet its stated RPS goals with purchased RECS, not actual renewable energy. The Green Tickets account for 2% of SMUD’s projected 2006 system

load, about 19% of its renewables forecast. PG&E has no information about whether Green Tickets are included in SMUD's power content information supplied to the California Energy Commission, but inclusion of Green Tickets is permitted under AB 1305, the legislation that requires utilities to file a power content label.

Second, the SMUD plan included in the CMUA letter had a line item under Existing Renewables that was labeled "PV Pioneer" and another labeled "PVP 1". PG&E does not know whether this "PV Pioneer" (included as a source for renewable energy to meet RPS) is the same as the PV Pioneer program whereby SMUD offered rebates to customers installing PV panels to offset their electricity use. However, PG&E will point out that none of the renewable self generation installed by our customers is included in PG&E's Power Content Label. All of PG&E's RPS compliance has been done with additional renewable resources. PG&E does not know whether SMUD includes PV Pioneer in their Power Content Label. If it is including customer generation, unless SMUD is separately tracking customer load and PV generation and adding customer load back into retail sales, SMUD may be double counting the effect of their customer solar programs, taking credit once when their customers reduce their energy usage, and then taking credit a second time by reporting the customer generation as part of their Power Content Label.

Furthermore, as SMUD makes clear on its Power Content Label, the projected percentage of renewable energy sources applies only to those resources specifically purchased from individual suppliers or generated by SMUD. As the Power Content Label states, 63% of SMUD resources is specifically purchased from individual suppliers. The remaining 37% of SMUD's sales, power purchased on the open market, should reflect the State power mix calculated annually by the CEC. For 2004, this power mix was 4% renewable energy sources. Thus, the power content of retail sales by SMUD is not 13%, it is 9.67%.²⁵

Finally, under state law, PG&E is required to provide 20% of its electricity from renewable generation by 2010. While SMUD asserts that it intends to match this 20% renewable goal sometime after 2010, SMUD's 20% goal is neither enforceable nor certain. At a minimum, the DEIR should impose an enforceable mitigation measure requiring SMUD to meet or exceed the 20% renewable goal for the Annexation area by 2010.

5. Self-Generation

PG&E's Self Generation Incentive Program provides rebates for solar, wind, fuel cells, biomass and cogeneration. PG&E recently interconnected its 10,000th solar customer. Since 2001, PG&E has interconnected more than 70 MW of solar generation and is currently interconnecting over 2 MW of customer solar generation every month.

²⁵ (63% times 13%) plus (37% times 4%) equals 9.67%. In fact, renewable power is almost never available on the daily market. Rather than 4%, 0% renewables would probably more accurately reflect SMUD's spot purchases. This means the more accurate percentage renewable energy resources for SMUD is about 8.2%.

In 2004, over half of the solar photovoltaics installed in the entire United States were installed by PG&E customers.

The solar rebate budget for 2006 was recently increased by an additional \$132 million to fund solar generation projects. PG&E will also be implementing the California Solar Initiative. According to CPUC projections, if the California Solar Initiative produces the anticipated customer participation, customer-owned solar generation in PG&E's service territory will be more than 1200 MW. SMUD has no similar program, nor any plans to establish such a solar presence in its service territory.

Finally, the funding for the SGIP program and the California Solar Initiative are in addition to the \$935 PG&E will spend for energy efficiency programs. According to the California Energy Commission,²⁶ the rebates for PV installations in SMUD's programs are funded through SMUD's public goods fund charge.

Exhibit B compares PG&E's renewables with those offered by SMUD. The DEIR must evaluate these programs and determine if the annexation may result in decreased reliance on renewable energy sources within the annexation area.

6. Other Renewable Energy Programs

PG&E supports solar energy in other ways as well. PG&E's Solar Schools Program has installed 30 solar electric systems at underserved schools throughout northern and central California, with 30 more projects scheduled for installation in 2006. The program also provides solar curricula, teacher training and grant money to inspire students to become the solar innovators and scientists of tomorrow.

PG&E's Solar Habitat Program is a partnership between PG&E and Habitat for Humanity to fund solar electric systems on Habitat homes in northern and central California. The program brings solar energy to families with limited incomes and provides training funds to expand Habitat for Humanity's expertise with solar installations. PG&E's Solar Schools and Solar Habitat Programs are funded entirely by PG&E's shareholders.

The DEIR erroneously creates the impression that if the annexation proceeds, per capita energy use and customer environmental impact will remain the same or perhaps even go down despite all evidence to the contrary. In fact per capita energy use is likely to increase, and the impact of customers on the environment is likely to increase for the following reasons, discussed above:

1. If rates decrease (PG&E emphatically does not think rates will decrease), simple economic theory leads to the conclusion that – all other things being equal – usage will increase.

²⁶ "Accelerated Renewable Energy Development", Draft Staff White Paper, California Energy Commission, July 30, 2004, 100-04-003D.

2. SMUD will not participate in the California Solar Initiative. At some point, SMUD may increase its commitment to customer-owned solar generation, but they have no requirement to do so and could drop the program at any time.

3. SMUD is not required to provide 20% of its electricity from renewable generation by 2010. In fact, it expects to reach 20% after PG&E.

4. SMUD's 2006 and beyond per capita investment in energy efficiency is approximately 75% that of PG&E's.

5. SMUD has no demand response goals.

6. SMUD has no Climate Protection Program.

7. PG&E is a Leader in Environmental Stewardship

PG&E is committed to being an environmental leader. PG&E wants to diminish our impact on the environment, which drives it to adopt new technologies, improve its environmental management practices, build strong ties with local communities and contribute to the development of public policies that raise the bar for the utility industry. For 100 years, PG&E has maintained the watershed areas of its vast hydroelectric system to preserve the environment and provide recreational opportunities for everyone in Northern California. This includes 12 campsites and recreational areas that are open to the public.

PG&E is a Charter Member of the California Climate Action Registry, created to help companies measure their greenhouse gas emissions. PG&E recently filed a proposal for a voluntary Climate Protection Program with the CPUC. The program will fund California-based projects to reduce greenhouse gases. Once approved by the CPUC, the program would make participating customers' electricity and natural gas use entirely "climate neutral." This is done using a premium paid by participating customers to invest in forest restoration and other projects that mitigate the climate change impacts of customers' electric and natural gas consumption. The Climate Protection Program is the first of its kind in the nation. SMUD customers who are also PG&E gas customers will be able participate in the program to make their natural gas consumption climate-neutral. If SMUD annexes portions of Yolo County, the affected customers would no longer be able to neutralize their electricity usage through the Climate Protection Program, but would still be able to neutralize their natural gas usage.

PG&E was the first utility company to certify its CO2 emissions; it expects to be the first utility to certify its SF6 emissions. PG&E is an active member of the Clean Energy Group, a coalition of environmentally progressive electric companies committed to advancing environmental policies that balance economic growth with environmental protection. PG&E is a Charter Partner of "SF6 Emission Reduction Partnership for Electric Power Systems." PG&E voluntarily reduced its SF6 leak rate by more than 50% and our absolute emissions by about 40%.

PG&E created a Volunteer Stewardship Program to provide additional support to the communities in which it operates and in which its employees live. Through this Program, over 500 employees volunteered more than 2000 hours on 14 different environmental projects in 2004. Projects ranged from river cleanups to wetland restoration.

PG&E has identified 140,000 acres of land to donate to public agencies or encumber with conservation easements. PG&E established the Pacific Forest and Watershed Stewardship Council to oversee the land use, and it will fund the Council for 10 years. PG&E established a non-profit organization dedicated to research and investment in clean energy technology. PG&E will provide \$30 million funding for this non-profit.

D. The DEIR Fails to Address the Impacts of Modifications PG&E Will Have to Undertake as a Result of the Annexation

The DEIR claims that the annexation should not have any adverse impact on PG&E's remaining transmission systems. DEIR, II-14. Multiple times during this process, PG&E has brought to LAFCo's attention that the annexation will have impacts on PG&E's 500-kV and 230-kV PG&E systems and will require PG&E to move up modifications to its system. Without any analysis of PG&E's claims, the DEIR simply states that PG&E has "not provided the analysis and data necessary to analyze or confirm this asserted impact," and it moves on without further discussion. *Id.* The DEIR must analyze the environmental impacts that will result from the facility modifications PG&E must move forward as a result of the annexation.

Contrary to LAFCo's claim, PG&E did in fact provide sufficient analysis. In its submissions to LAFCo on September 16, 2005, at various points, PG&E identified these impacts. For example, PG&E wrote:

PG&E estimates that it will incur costs necessary to reinforce various high voltage (230 kV) transmission assets that it owns that are used, in part, to wheel power to SMUD. If the approximately 350 MW of Yolo load, plus additional 50 MW of UC Davis load (since SMUD has proposed that UCD be served through SMUD's facilities) is added to the SMUD area, the power to serve this load will be flow over a different path than is presently the case. If so, facilities south of PG&E's Rio Oso Substation would become overloaded and need to be upgraded well in advance of the time required were it not for the condemnation. The net present value of these expenditures (as of January 1, 2008) amounts to \$14.12 million.

PG&E's Response to Sacramento County LAFCo Regarding SMUD's Proposed Annexation within Yolo County, at 41 (Sept. 16, 2005). In its Fair Market Value study submitted that same day, PG&E wrote "[s]hifting the customer load in this manner would change power flow pattern in the Sacramento Area and would result in overloads, increased transmission line losses and unacceptable voltage drops in the Sacramento Area." Fair Market Value as of January 1, 2008, PG&E Yolo County Electric Properties SMUD Proposes to Condemn, at 68 (Sept. 16, 2005). The submission then went on to

detail specific actions PG&E would need to take in order to correct these deficiencies.
Id.

Although PG&E contends LAFCo already has sufficient information to analyze these impacts, PG&E is attaching a power flow analysis performed by its engineering team that addresses the need to make changes to the 230kv and 500kv lines serving SMUD. Preliminary Power Flow Study Report, September 13, 2006 (attached as Exhibit C). As this shows, the annexation will cause PG&E to move forward modifications to its facilities, and the DEIR must analyze the impacts of these activities.

IV. CONCLUSION

For the foregoing reasons, the DEIR prepared for LAFCo is legally and factually erroneous and deficient and must be significantly revised and reissued for further public comment before a Final EIR can be issued. PG&E appreciates the opportunity to comment on the DEIR and remains available to answer any questions and provide additional information to LAFCo on the important issues raised by the DEIR and annexation proposal.

Exhibit A

Exhibit A: PG&E Awards for Customer Energy Efficiency

<u>Year</u>	<u>Award Name</u>	<u>Granting Organization</u>	<u>Description</u>
2005	Better Communications Awards	Utility Communicators International	For Energy Partners ethnic marketing, and residential new construction direct mail marketing campaigns
2005	ACEEE Exemplary Recognition	American Council for an Energy Efficient Economy	For the Energy Partners low income program.
2005	Energy Star Award	U.S. Environmental Protection Agency and DOE	For Regional, State, and Community Leadership
2005	Energy Star for Homes Outstanding Achievement Award	U.S. Environmental Protection Agency and DOE	For sponsoring more than 1000 ENERGY STAR qualified homes in the past year
2005	Communicator Award	U.S. Environmental Protection Agency and DOE	Consumer Video
2005	Prism Award (Public Relations Society of America)	U.S. Environmental Protection Agency and DOE	CARE Kiosk
2005	Energy Star Pearl Award	U.S. Environmental Protection Agency and DOE	Residential Single Family Lighting
2005	American Institute of Architects Presidential Citation	American Institute of Architects	Savings By Design- in recognition of outstanding contributions to the architectural profession.
2005	Flex Your Power	Flex Your Power	For City of Berkeley "Smart Lights" program
2004	Prism Award	Public Relations Society of America	CARE program outreach campaign won Regional recognition for CARE Kiosk design.
2004	Natural Gas Vehicle Achievement Award	Clean Vehicle Education Foundation and Natural Gas Vehicle Coalition	
2004	The Communicator Award	The Communicators Award	For ENERGY STAR New Homes "The Inside Story"
2004	Energy Star For Homes Outstanding Achievement Award	U.S. Environmental Protection Agency and DOE	For sponsoring more than 1,000 ENERGY STAR qualified homes in the past year.
2003	Merit Award	Association of Energy Service Professionals	For Innovation in marketing for Swimming Pool Pump & Motor Replacement Rebate Program
2003	PR Week Honorable Mention	PR Week	
2003	ENERGY STAR Partner of the Year Award	U.S. Environmental Protection Agency and DOE	
2003	Energy Star Award	U.S. Environmental Protection Agency and DOE	For Regional, State and Community Leadership in Energy Efficiency to Pacific Gas and Electric Company, Sempra Energy Utilities (San Diego Gas & Electric and Southern California Gas), and Southern California Edison for their 2003 California Energy Star New Homes Program.
2003	Exemplary Program Recognition	American Council for an Energy Efficient Economy	Recognized PG&E's Express Efficiency Program as an "exemplary program" as part of a national awards program to honor America's best natural gas energy efficiency programs.
2003	Exemplary Program Recognition	American Council for an Energy Efficient Economy	Recognized PG&E's Standard Performance Program for its success and effectiveness in helping customers realize greater levels of energy efficiency. This program has yielded significant economic and environmental benefits through the energy savings it has achieved. PG&E is commended for its efforts in offering this model of "best practices" for energy efficiency programs across the nation.
2003	Climate Protection Award	United State's Environmental Protection Agency	Recognizes individuals, companies, and associations that have demonstrated outstanding leadership, personal dedication, and technical achievements in reducing greenhouse gas emissions and protecting the climate.
2003	Telly Award	Telly Awards	For their "How To Be Comfortable" video. Since its founding in 1980, the Telly Awards has become a well-known, highly respected national competition. The Telly is one of the most sought-after awards in the TV, commercial and video industry. For the past several years, the Telly Awards has received in excess of 10,000 entries each year.
2002	ADDY Award	Sacramento Advertising Club	The Savings By Design (SBD) collaterals were selected as the top winner from a field of 450 entrants in the "Product or Service Sales Presentation" category. The winner for this category is selected based on a combination of criteria, specifically creativity and effective communication. The gold medal placement assures that the SBD package will go on to national competition For excellence in marketing/advertising in a competition.
2002	ENERGY STAR Partner of the Year Award	U.S. Environmental Protection Agency and DOE	For New Homes. Pacific Gas and Electric Company, Southern California Edison, and Sempra Energy (San Diego Gas & Electric and Southern California Gas Co.) received the award due to the success of their development and implementation of the 2002 Statewide California Energy Star New Homes Program.

2002	ENERGY STAR	U.S. Environmental Protection Agency and DOE	For Regional, State and Community Leadership in Energy Efficiency. Pacific Gas and Electric Company, Southern California Edison, and Sempra Energy (San Diego Gas & Electric and Southern California Gas Co.) received the award for their Statewide Residential Single Family Incentive Program. This award will be shared with Flex Your Power.
2002	Champion of Energy Efficiency Award	American Council for an Energy Efficient Economy	For the California utilities' efforts during the energy crisis in 2001
2002	Exemplary Award	American Council for an Energy Efficient Economy	For exemplifying direct energy savings, market transformation effects, evaluation results, quantitative assessment, innovation, and replicability:
2002	AXIEM Award	Absolute eXcellence in Electronic Media	For "How to Be Comfortable" Ocean Beach Productions.
2002	AXIEM Award	Absolute eXcellence in Electronic Media	For "Built for Comfort" Ocean Beach Productions.
2002	ACEEE Statewide Exemplary Award	American Council for an Energy Efficient Economy	For Codes and Standards Program.
2002	ACEEE Honorable Mention Award	American Council for an Energy Efficient Economy	For Compressed Air Management Program.
2002	ACEEE Statewide Honorable Mention Award	American Council for an Energy Efficient Economy	For Emerging Technologies and California High Performance Schools Programs.
2002	Appreciation Award		For Community Resource Project.
2002	Home Day Award-Energy Efficient Mortgages	Fresno Association of Realtors	In appreciation of our Home Day sponsorship.
2002	National Marketing and Advertising Award	Public Relations Society of America Silver Anvil	For CARE Program marketing outreach.
2002	Merit Award	Association of Energy Service Professionals	For Upstream Heating, Ventilation, and Air Conditioning project.
2002	CARE Day	City of Oakland	
2002	Certificate of Recognition	Nuestra Vidat, Univision Television 19	In recognition for PG&E's dedication to the Greater Sacramento Hispanic Community.
2002	Recognition by the American Institute of Architects California Council	American Institute of Architects California Council	Recognized as a member of the Eagle Forum and for its contributions to the AIACC.
2002	Certificate of Recognition	California State Senate	For new Compressed Natural Gas Station.
2002	Certificate of Recognition	House of Representatives	For new Compressed Natural Gas Station.
2002	Prism Award	Public Relations Society of America	For CARE Direct Mail/Direct Response and Ethnic/Multicultural Program
2002	Certificate of Recognition	Merced County Board of Supervisors	For new Compressed Natural Gas Station.
2002	SABRE Award	The Holmes Group	For Multicommunications for "Bringing You Energy with CARE." Recognized for the best programs in specific brand-building and reputation management.
2002	Silver Anvil Award	Public Relations Society of America	For Multicultural Public Relations.
2001	Certificate of Recognition	California State Assembly	Recognition as a "Clean Air Hero"
2001	Congressional Recognition	US Congress	For outstanding and invaluable service to the community.
2001	Association of Energy Services Professionals Award	Association of Energy Service Professionals	For and energy efficiency central air conditioner and heat pump replacement program
2001	La Cooperativa Outstanding Community Partnership Award	La Cooperativa	Recognition for Low-income Energy Efficiency Program.
2001	Energy Star Award	U.S. Environmental Protection Agency and DOE	For consumer education.
2001	Energy Star Award	U.S. Environmental Protection Agency and DOE	For consumer education.
2001	Research and Technology Award	American Institute of Architects California Council	Recognizes individuals or groups who have made significant contributions to the advancement of architectural technology through the development or implementation of products or systems, or who have engaged in research that has made substantial contributions to furthering the practice of architecture.
2001	Recognition by the American Institute of Architects California Council	American Institute of Architects California Council	Recognized as a member of the Eagle Forum and for its contributions to the AIACC.
2001	Clean Air Award for Technology	American Lung Society	
2001	Association of Energy Services Professionals Award	Association of Energy Service Professionals	For and energy efficiency central air conditioner and heat pump replacement program
2001	Communicator Award	ENERGY STAR	The Comfort Home Program's "Built for Comfort" and "How to be Comfortable" videos received the award in recognition for their work producing an outstanding and highly regarded video by their peers.
2001	Governor's Environmental and Economic Leadership Award	State of California	For excellence in protecting the environment and conserving natural resources, while at the same time promoting compatible, sustainable economic development.
2001	Special Merit Award	Exhibitor Magazine	
2000	Recognition by the American Institute of Architects California Council	American Institute of Architects California Council	Recognized as a member of the Eagle Forum and for its contributions to the AIACC.
2000	Telly Award	Telly Awards	For video, "Selling the Green," for the First Financials Energy Star Financing Contractor Kit.
2000	AXIEM Award	Absolute eXcellence in Electronic Media	For absolute excellence in Electronic Media for Comfort Home Program.

2000	Energy Star Award	U.S. Environmental Protection Agency and DOE	Energy Star Financing. "Selling the Green."
2000	Silver CINDY Award	International Association of Audio Visual Communications	For "Selling the Green" video.
2000	Research and Technology Honor Award	American Institute of Architects California Council	For individuals or groups who have made significant contributions to the advancement of architectural technology through the development or implementation of products or systems, or who have engaged in research that has made substantial contributions to furthering the practice of architecture
2000	Recognition by the American Institute of Architects California Council	American Institute of Architects California Council	Recognized as a member of the Eagle Forum and for its contributions to the AIACC.
2000	Silver CINDY Award	International Association of Audio Visual Communications	Given to the Residential New Construction Comfort Home Program for its 1999 "Look Into a Comfort Home" consumer video
1999	Bronze EFFIE Award	New York American Marketing Association	For the 1998 Comfort Home Program advertising campaign.
1999	HUD Best Practice Award	U.S. Department of Housing and Urban Development	For the Energy-Aware Housing Agents Program, which was designed to encourage HUD home buyers to use the FHA's Energy Efficient Mortgage Program to finance the installation of cost-saving energy efficient home improvements. The program was targeted to Spanish-speaking low-income first-time homebuyers
1999	Silver CINDY Award	International Association of Audio Visual Communications	Given to the Residential New Construction Comfort Home Program for its 1999 "Look Into a Comfort Home" consumer video
1999	Taylor Technical Talent Award	Illuminating Engineering Society of North America	For research performed using a lighting control system tested in Phillip Burton Federal Building and Courthouse in San Francisco.
1999	Energy Efficient Building Award	Energy User News	For the HVAC system at Cisco Systems' new 3,229,999 square foot building. The Energy User award is awarded for the new construction project that best exemplifies innovation in energy efficiency building management.
1999	Natural Gas Coalition Excellence Award	Natural Gas Vehicle Coalition	For producing natural gas vehicle education materials for the school transportation, refuse collection, and public transit market sectors.
1998	Industry Outreach Award	California Institute of Food and Agricultural Research	Recognizing excellence in coordination and sponsorship of the mobile test and demonstration unit.
1994	The Alliance to Save Energy Efficiency Award	Alliance to Save Energy	In recognition of outstanding vision and leadership in promoting energy efficiency.
1994	ADSMP Award	Association of Energy Service Professionals	For being an Executive Corporate Sponsor
1993	Efficient Building Award	Energy User News	For excellence and innovation in energy efficiency and building management to Commercial New Construction Section for participating in the award-winning Contract Engineering project at Provident Central Credit Union.
1992	CBIA Platinum Sponsor Award	California Building Industry Association	
1992	Honorable Mention	Edison Electric Institute	Marketing Achievement Awards for Residential Company Program
1992	Pioneer Award	Direct Marketing Creative Guild	For consumer campaign-single medium.

Exhibit B

Exhibit B: Comparison of PG&E and SMUD Renewables and Energy Efficiency

	PG&E	SMUD
2003 Percent of Power from Renewables ¹		9%
Renewables Target		20% by 2011
2004 Percent of Operating Revenues Used for Public Purpose Programs		2.15%
Energy Efficiency in Procurement Plans		No
2006-2008 Percent of Sales Used for Public Purpose Programs		2.30% ²
Green Pricing Option Available ³	No	
Self Generation Incentive Program		Solar Only ⁴
Net Metering for Renewable Self Generation	Yes	Yes
Solar Generation		9.575 MW
Energy Efficiency Rebate Programs ⁵	Yes	Yes
Leadership in Energy Efficiency Program Design ⁶		No

¹ 2003 is the most recent year for which PG&E was able to obtain actual power content for SMUD.

² 2.3% based on average of 2003 and 2004 from 2004 SMUD Annual Report

³ SMUD offers a tariff where customers pay a premium which SMUD uses to purchase renewable energy credits to cover the customers' usage.

⁴ However, SMUD customers who are also PG&E gas customers can participate in PG&E's SGIP program.

⁵ But see list, below, of measures included in each program.

Energy Efficiency Partnerships with Cities	<input checked="" type="checkbox"/>	No
Customer Driven Energy Efficiency Program Design	<input checked="" type="checkbox"/>	No
Energy Efficiency On-Line Analysis	Yes	Yes
Energy Efficiency Technical Support Services	Yes	Yes
Energy Efficiency Financing	No	<input checked="" type="checkbox"/>
Demand Response Programs	Yes	Yes
On-Line customer meter data	Yes	Yes
Clean Air Transportation Information	<input checked="" type="checkbox"/>	Elec
Clean Air Transportation Infrastructure Support	Yes	Yes
Clean Air Transportation Fleet	Yes	Yes
Solar Schools Program	<input checked="" type="checkbox"/>	Info Only

⁶ PG&E program materials become public information when they are filed. SMUD typically uses PG&E program materials in its program design, such as our Savings by Design program and our POOL Program. PG&E held a Pool Pump Program training class for SMUD employees and pool service professionals that work in Sacramento. SMUD is modeling their Quality Installation Standards around programs already launched by PG&E. SMUD adopted PG&E statewide HVAC specifications and have included them in their 2003-05 programs. PG&E initiated and hosted a 2006 HVAC Planning Forum for Contractors and invited SMUD to participate. We held one of the sessions in SMUD's territory. PG&E has a robust upstream lighting program that benefits SMUD's customers because stores in their service territory can participate.

Measures Included in PG&E and SMUD Energy Efficiency Rebate Programs

Measure	PG&E	SMUD
<i>Residential</i>		
Clothes Washers	X	X
Dishwashers	X	
Refrigerator/Freezer Recycling	X	
Central Air Conditioning	X	X
Room Air Conditiong	X	X
Evaporative Cooling	X	
Whole House Fans	X	X
Variable Speed Motor Air Handlers	X	
Heat Pumps	X	financing
Furnaces	X	
Insulation	X	financing
Water Heaters	X	X
Solar Water Heaters		X
Windows	X	financing
Lighting	X	X
Pool Pumps ⁷	X	X
Refrigerant Charge and Airflow	X	
Duct Sealing		X

⁷ SMUD literally copied PG&E's pool pump and motor program. PG&E led the way nationally and codes and standards were based on the results of our programs.

Shade Trees		X
Ceiling Fan with compact fluorescent lamp		X
Solar Water Heating		financing
<i>Nonresidential</i>		
Linear and Compact Fluorescent Fixtures	X	X
High Intensity Discharge Fixtures	X	
Occupancy Sensors	X	X
Photocells	X	
Time Clocks for Lighting	X	
LED Exit Signs	X	
Channel Signs	X	
Packaged HVAC (for distributors)	X	X
Insulated Hot Food Holding Cabinets	X	
Reflective Window Film	X	
Variable Frequency Drive HVAC Fans	X	
Sprinkler Drip Irrigation	X	
Low Pressure Sprinkler Nozzles	X	
Night Covers; Strip Curtains; Display Case Doors	X	
Insulation for Bare Suction Lines	X	
Gaskets	X	
Auto-Closers for Doors	X	
Evaporator Fan Controller	X	
Vending Machine Controller	X	
Efficient Motors (for distributors)	X	
Customized Rebates for Large Customers		

Lighting	X	X
Occupancy Sensors	X	
Refrigeration	X	X
Industrial Process	X	X
Food Service	X	
Other ⁸	X	

• _____

⁸ PG&E's Standard Performance Contract Program provides rebates for any measures that exceed applicable government and/or industry minimum efficiency standards and that produce verified savings for at least five years.

Exhibit C

Preliminary Power Flow Study Report (SMUD Annexation Project)



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September 13, 2005¹

¹ This report was reviewed on 2/15/06. On Page 6, the operation date of the proposed transmission projects was updated to be consistent with PG&E's 2005 Electric Transmission Grid Expansion Plan.

Introduction

R.W. Beck, Inc. released its SMUD Annexation Feasibility Study Report in January 2005 that evaluated the economic and technical feasibility of annexing the cities of West Sacramento, Davis, and Woodland along with adjacent portions of Yolo County into SMUD's electric service area. SMUD Staff also completed its assessment and issued their report in April 2005. Both reports evaluated the impact of the annexation on the SMUD transmission system only and did not address the impact on the regional transmission system. Both reports are posted on SMUD web site; <http://www.smud.org/annexation/reports.html>.

Objective

The objective of this study is to evaluate the impact of the SMUD annexation on the bulk transmission system in Northern California in accordance with the North American Electric Reliability Council (NERC) and Western Electricity Coordinating Council (WECC) Planning Standards. This study did not address other important issues; e.g., control area, future service flexibility, and operation and maintenance.

This study also identified potential reinforcements for each criteria violation caused by the SMUD Annexation Project. This study provides rough cost estimates for the potential reinforcements.

SMUD Annexation Project

Based on SMUD's analysis, the SMUD Annexation Project includes the following elements:

1. Converting PG&E's Brighton-Davis 115 kV line to a new SMUD Hedge-Davis 115 kV line,
2. Re-terminating PG&E's Rio Oso-West Sacramento and Brighton-West Sacramento 115 kV lines to SMUD's North City-West Sacramento and Hurley-West Sacramento 115 lines, respectively,
3. Building a new 115 kV double circuit line (approximately 18 miles) from Elverta Substation to PG&E's existing Woodland Substation,
4. Serving PG&E's Plainfield substation loads from existing or future SMUD 115/12 kV substations,
5. Disconnecting UC Davis at Davis and serving UC Davis from existing PG&E facilities, and
6. Disconnecting Barker Slough (CDWR) at Barker Slough Junction and serving Barker Slough from PG&E's 60 kV system.

Under the proposed SMUD Annexation Project, SMUD would take ownership of PG&E's West Sacramento, Davis, and Woodland Substations. Distribution customer load at these substations along with Plainfield Substation, transmission customer loads at Deep Water, Post Office, Hunt Foods, and Mobil Chemical would all be served by SMUD. In addition, the standby load service to Woodland Biomass, a 25MVA generation plant, would

be served by SMUD. Attachment 1 shows the current load forecast for those substations (the SMUD annexation area) under 1-in-10 year adverse weather conditions that would be a total of 354 MW and 374 MW in 2008 and 2014, respectively.

The SMUD Annexation Project assumed that PG&E would serve UC Davis from other PG&E facilities. However, since PG&E's existing 60 kV system in the area does not have spare capacity to serve UC Davis, PG&E assumed in this study that UC Davis would still be served from Davis Substation. Such an arrangement would require that SMUD wheels power through its system to serve the UC Davis load. With this modification of an additional 36.6 MW of load at UC Davis, the SMUD Annexation Project would result in a total customer load increase of about 391 MW in 2008 and 411 MW in 2014.

The annexation area customer load is currently served from PG&E's Rio Oso 115 kV Substation and Brighton 115 kV Substation from the north. See Figure 1. Under the SMUD Annexation Project, this customer load would be served from SMUD transmission system from the south. See Figure 2. As described below, shifting this customer load would change power flow pattern in the Sacramento Area and would result in overloads, increased transmission line losses and unacceptable voltage drop in the Sacramento Area.

Study Method

The study was conducted by evaluating 2008 and 2014 conditions with and without the SMUD Annexation Project. Using this methodology provided a means to estimate whether reinforcements that are required with the SMUD Annexation Project in service would be required at a later date in the absence of that project.

Study Scenarios

The SMUD system is interconnected with the PG&E system at Lake and Rancho Seco Substations and with the Western Area Power Administration (WAPA) system at Hurley and Elverta Substations. SMUD currently does not have sufficient internal generation and relies on importing power to serve a portion of its existing customer load. After the annexation, SMUD would have to serve the additional loads and losses by either purchasing additional power from generators outside SMUD control area, or by building new power plants in SMUD service territory. This study evaluated the system impact of the following two scenarios:

1. SMUD would purchase additional power from the generators in Northern California to serve the additional loads from the annexation. This study assumed that PG&E would decrease the same amount of power purchase from generators in Northern California. Therefore, the generation and the net import into Northern California would not change.
2. SMUD would build new generators at Cosumnes Power Plant at Rancho Seco to serve the additional loads from the annexation and maintain the same net import level into the SMUD control area. This assumed that PG&E would decrease power

purchase from generators in the Midway area (outside of study area). Therefore, the net import into Northern California would not change.

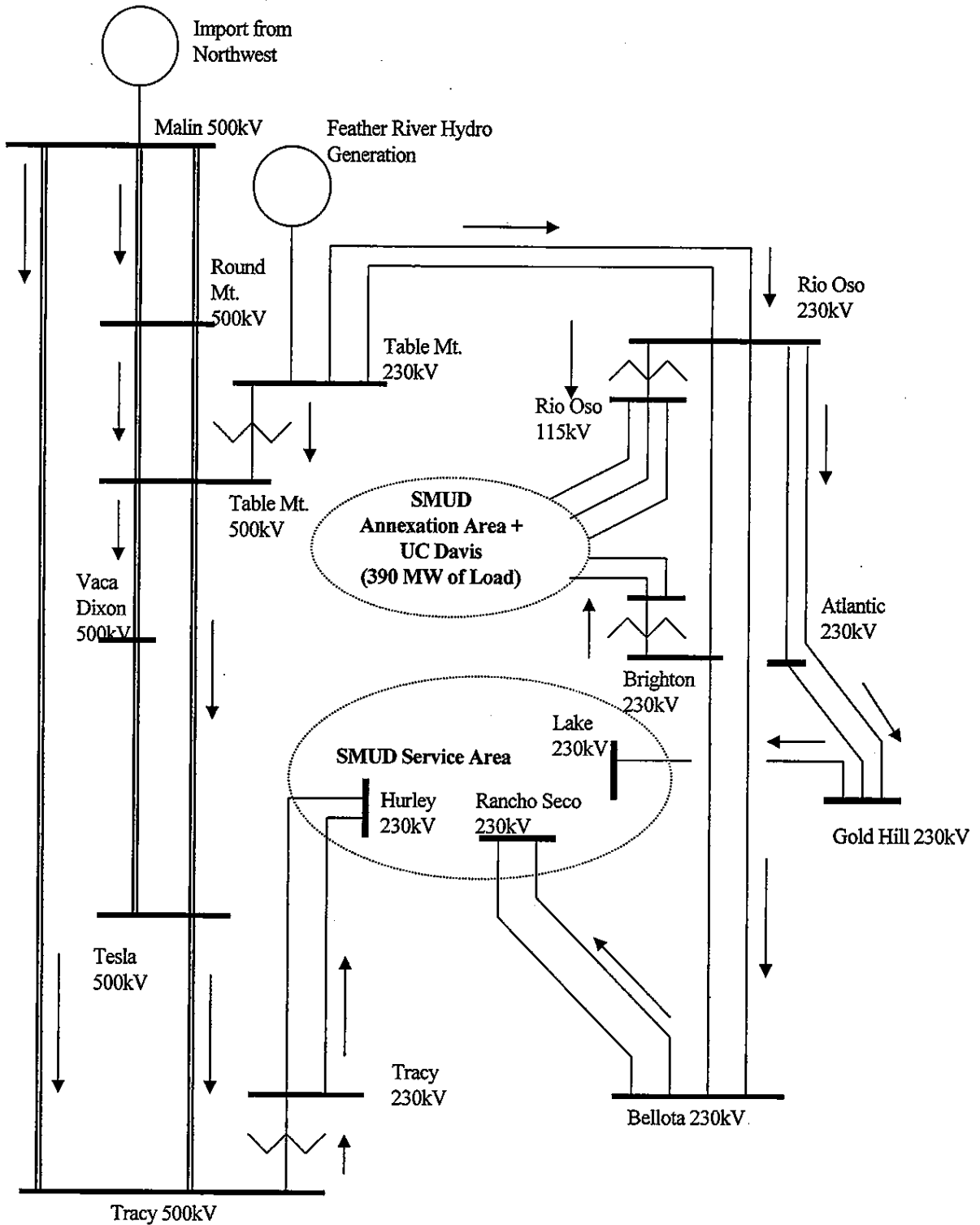


Figure 1: Summer Peak Power Flow before the SMUD Annexation Project

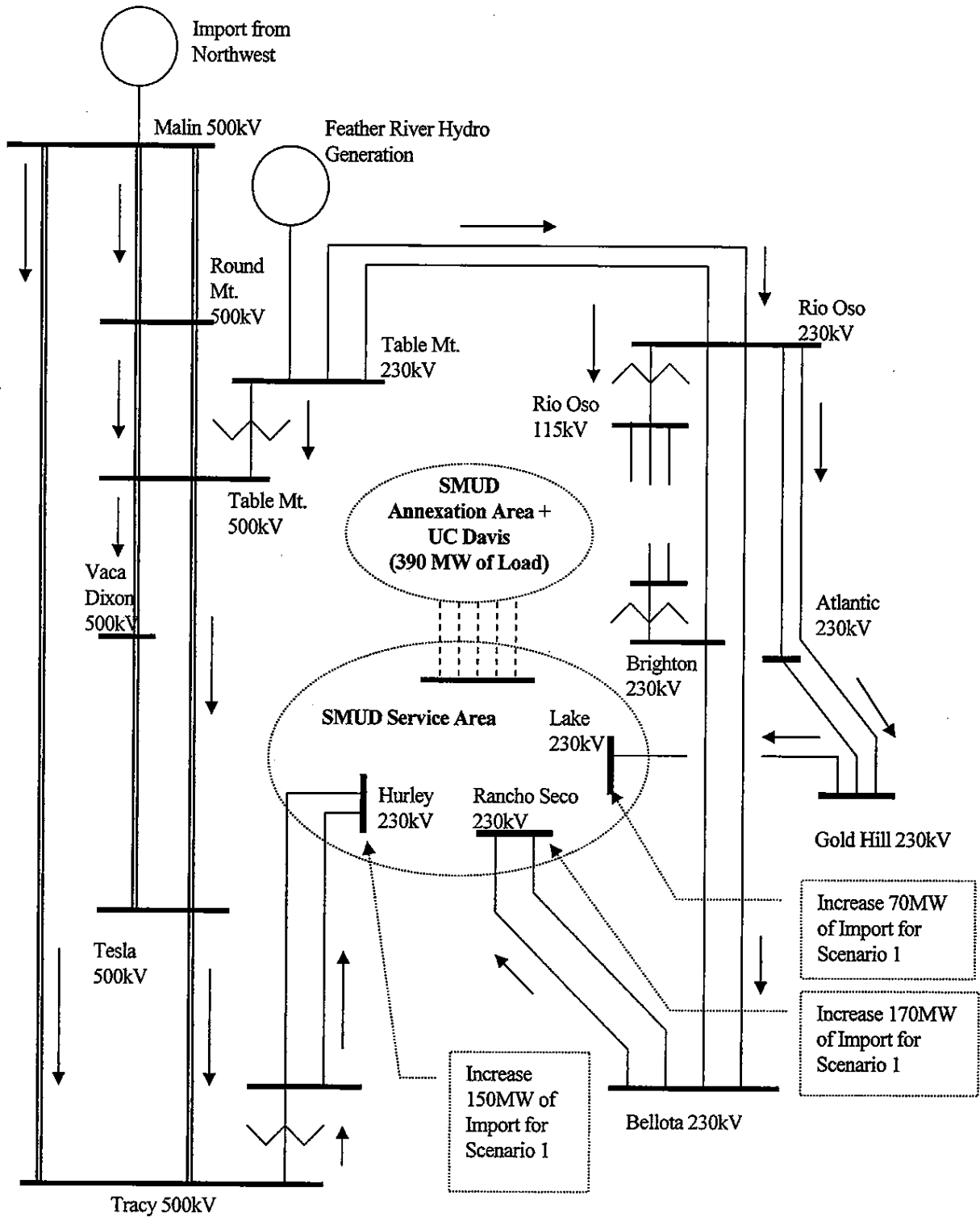


Figure 2: Summer Peak Power Flow after the SMUD Annexation Project

Power Flow Base Case Assumptions

This study was based on the 2008 and 2014 heavy summer area base cases (a05sum2008_pge_a5.sav and a05sum2014_pge_a5.sav) and the 2008 and 2014 heavy summer system base case (a05sum2008.sav and a05sum2014.sav) developed for the 2005 PG&E Electric Transmission Expansion Study. The heavy summer area base cases model a detailed PG&E transmission system and the projected 1-in-10 year adverse weather conditions for the Sacramento/Sierra area. The area base cases were used to evaluate 230, 115, and 60 kV contingencies in the Sacramento/Sierra area. The heavy summer system base cases model the full WECC system and the projected 1-in-5 year adverse weather conditions in Northern California. The system base cases were used to evaluate 500 kV contingencies in Northern California.

Both area and system base cases were modified to include the following two proposed transmission projects in the study area that could have significant impact on study results:

1. Atlantic – Lincoln Transmission Project (T759)
This project would convert the Atlantic – Lincoln – Rio Oso 60 kV system to 115 kV and create a new 115 kV path between Rio Oso and Atlantic. This 115 kV path would decrease power flow on the Rio Oso – Atlantic 230 kV line under normal and emergency conditions. This project is scheduled to be operational by May 2008.
2. Palermo – Rio Oso 115 kV Lines Project (T686)
This project would reconductor the Palermo – East Nicolaus and Palermo – Bugue 115 kV lines to relieve potential emergency overloads. This project is scheduled to be completed by May 2008.

The above two proposed transmission projects were included in PG&E's 2005 Electric Transmission Grid Expansion Plan that was issued on December 21, 2005.

In addition, flows in both area and system base cases were increased to a high level by modifying system conditions to model a corner point of the 2005 Heavy Summer AC-DC Nomogram curves as follows:

- Northern California hydro generation at 86% of the rated generation capacity,
- Path 66 (California Oregon Intertie) north-to-south transfer at 4600 MW, and
- Pacific DC Intertie north-to-south transfer at 3100 MW.

Steady State and Post-transient Power Flow Study Results

Under Scenario 1, SMUD would increase imports to serve the additional customer load and losses after the annexation. The study results show that the imports would increase by about 70 MW at Lake, 170 MW at Rancho Seco and 150 MW at Hurley and Elverta. It would also increase transmission losses in Northern California by about 19 MW. See Table A1-2, Attachment 1.

The increased import level at Lake and Rancho Seco would cause normal and emergency overloads on 230 and 115 kV transmission lines in the Sacramento/Sierra area which does not comply with NERC/WECC Planning Standards. If the overloads were not relieved immediately, it would damage the transmission equipment leading to potential fire and personal injury to the public or utility personnel. Mandatory compliance with the NERC/WECC Planning Standards is required. The increased import level at Elverta and Hurley would cause higher power flow on the 500 kV lines at south of Table Mt. that would result in lower bus voltage and reactive margin at Tesla and Tracy.

Under Scenario 2, SMUD would build new generators at Cosumnes Power Plant at Rancho Seco to serve the additional loads and losses after the annexation. SMUD would maintain about the same import level. However, it would increase import at Lake and decrease import at Rancho Seco that would cause normal and emergency overloads on the 230 and 115 kV lines in the Sacramento/Sierra area which does not comply with NERC/WECC Planning Standards. It would also increase power flow on the 500 kV lines at south of Table Mt. that would slightly increase transmission losses in Northern California.

The study results show that the following transmission facilities would need reinforcements to meet the NERC/WECC Planning Standards:

(1) Rio Oso – Atlantic 230 kV line

The study results show that, under either Scenario 1 or 2, the SMUD Annexation Project would load the Rio Oso – Atlantic 230 kV line up to its summer normal rating of 826 amperes by 2014. See Table A2-2, Attachment 2. It would also cause about 3% emergency overload on the Rio Oso – Atlantic 230 kV line for loss of the Rio Oso – Gold Hill 230 kV line (Category “B” contingency) under 2008 summer peak conditions studied. The emergency overloads would increase to about 12% by 2014. Without the SMUD Annexation Project, the Rio Oso – Atlantic 230 kV line would not need to be upgraded until 2015. See Case SIE-B7, Table A4-1, Attachment 4.

Potential Reinforcement: Re-conductor the Rio Oso – Atlantic section of the Rio Oso – Gold Hill 230 kV DCTL.
Estimated Cost: \$13 million

(2) Rio Oso – Gold Hill 230 kV line

The study results show that, under either Scenario 1 or 2, the Rio Oso – Gold Hill 230 kV line would experience emergency overloads for loss of the Rio Oso – Atlantic 230 kV line (Category “B” contingency) by 2014. Without the SMUD Annexation Project, the Rio Oso – Gold Hill 230 kV line would not need to be upgraded until 2026. See Case SIE-B6, Table A4-2, Attachment 4.

Potential Reinforcement: Re-conductor the Atlantic – Gold Hill section of the Rio Oso – Gold Hill 230 kV DCTL.
Estimated Cost: \$21 million

(3) Voltage and Reactive Margin in Sacramento Valley

The study results show that, under Scenario 1 or 2, the SMUD Annexation Project would have negative impact on steady state and emergency voltages in Sacramento Area. The steady state bus voltages at the annexed substations in Yolo County would drop by about 3.5% in 2008. Without the installation of voltage support devices, the voltage drop would increase to about 10% by 2014. See Table A2-3 and 4, Attachment 2. In addition, the study results show that Scenario 1 would not meet the WECC reactive margin criteria for loss of the Tracy – Hurley #1 and #2 230 kV lines (Category “C” contingency). The contingency could cause voltage collapse and wide area blackout in the Sacramento Valley area including WAPA’s and PG&E’s customers.

The import capability at California Oregon Intertie (COI) is currently limited by the post transient reactive margin at 500 kV buses in the Northwest and Northern California. The most credible contingency for reactive margin is the loss of two Palo Verde generation units. The study results show that, under Scenario 1, the SMUD Annexation Project would decrease the reactive margin at Tesla 500 kV bus by about 400 MVAR. See Attachment 5.

Potential Reinforcement: Install shunt capacitor bank to improve voltages and reactive margin for Scenario 1.
 Estimated Cost: \$11 million

Financial Impact

An economic evaluation was conducted to determine the financial impact of the SMUD Annexation Project (see Attachment 6). Alternative 1 is the status quo with expenditures in the absence of the SMUD Annexation Project. Alternative 2 and 3 are the Scenario 1 and 2 of the SMUD Annexation Project, respectively. The following table 1 shows the Net Present Value of cash flow (NPV) and the Present Value of Revenue Requirement (PVRR) for these alternatives. The difference in these values with respect to Alternative 1 provides an estimate of the financial impact of Scenarios 1 and 2:

Table 1
 Financial Impact of the SMUD Annexation Project

	Status Quo	Scenario 1		Scenario 2	
	(\$1,000)	(\$1,000)	Diff (\$1,000)	(\$1,000)	Diff (\$1,000)
NPV	-6,390	-28,432	-22,042	-20,424	-14,034
PVRR	10,785	47,986	37,201	34,472	23,687

The economic evaluation results show that, over a 20-year study period, the SMUD Annexation Project would increase the negative Net Present Value of cash flow (NPV) by \$22,042,000 for Scenario 1 and \$14,034,000 for Scenario 2.

Study Conclusion

This study concludes that, under either Scenario 1 or 2, the SMUD Annexation Project has significant impacts on the regional transmission system. It would decrease the reactive margin at 500 kV buses in Northern California that would result in a decrease of the COI transfer capability.

The proposed SMUD Annexation Project would also cause normal and emergency overloads on the 230 and 115 kV transmission facilities. Upgrades would need to be advanced by seven years to meet the NERC/WECC Planning Standards.

Since the proposed SMUD Annexation Project has a significant regional impact, SMUD should follow the WECC Progress Report Policies and Procedures². SMUD should prepare and submit a comprehensive Progress Report to the WECC Technical Staff and Technical Studies Subcommittee (TSS) members for review and input. SMUD should also form a project review group for developing mitigation plan to minimize regional impacts.

Attachments

1. Area load, generation and major path flow Modeled in Base Cases.
2. Steady State Power Flow Study Results
3. Power Flow Study Results for 500 kV Contingencies
4. Power Flow Study Results for 230 kV Contingencies
5. Reactive Margin Study Results
6. EASOP Analysis

² That is published at WECC's web site, http://www.wecc.biz/documents/standards/recently_approved_standards.html.

Attachment 1
Area Load, Generation and Major Path Flow Modeled in Base Cases

Table A1
 1-in-10 Year Load forecast for SMUD Annexation Area

Bus #	Substation	Bank #	2008 Sumpk (MW)	2014 Sumpk (MW)
31960	Mobil Chem	1	2.42	2.42
31970	Woodland	1	50.06	52.81
31970	Woodland	2	46.78	49.35
31970	Woodland	3	26.05	27.48
31976	Post Office	1	1.70	1.70
31976	Post Office	1A	1.70	1.70
31986	West Sacramento	1	32.98	35.00
31986	West Sacramento	2	24.70	26.11
31986	West Sacramento	3	28.39	30.13
31988	Deep Water	3	17.54	18.61
31990	Davis	1	30.71	32.45
31990	Davis	2	38.55	40.71
31990	Davis	3	43.02	45.45
31992	Hunt	1	0.27	0.27
32092	Plainfield	1	9.41	9.92
	Total		354.28	374.11

Note: UC Davis loads was modeled at 36.6 MW + 8.3 MVAR and UC Davis cogeneration was modeled on-line at 3.5 MW of generation.

Table A1-2
 Area Loads/Generation and Major Path Flow
 (2008 Heavy Summer System Base Case)

	Descriptions	Base (sum08_Base_r1.sav) (MW)	Scenario 1 (sum08_s1_r1.sav) (MW)	Scenario 2 (sum08_s2_r1.sav) (MW)
1	Path 15 flow (n2s)	663	643	990
2	Path 26flow (n2s)	3700	3700	3681
3	Path 66 Flow (n2s)	3600	4597	4577
4	PDCI flow (n2s)	3105	3105	3105
5	Northern California Area Load/Loss	27636	27655	27645
6	Northern California Area Generation	26667	26687	26679
7	SMUD Load/Loss	3258	3264	3267
8	SMUD Generation	1480	1480	1837
9	SMUD Annexation (load/loss)	0	357	357
10	SMUD Area Import at Lake	156	221	194
11	SMUD Area Import at Rancho Seco	389	560	352
12	SMUD Area Import at Elverta & Hurley	1244	1396	1270
13	SMUD Area total Import	1244	2177	1817
14	SMUD Area Loss Increase	0	6	8
15	Northern California Area Loss Increase	0	19	9

**Attachment 2
Steady State Power Flow Study Results**

Table A2-1
Steady State Power Flow Base Cases Results
(2008 Heavy Summer Base Case)

	Transmission Facilities	SN Rating (Amps)	Base		Scenario 1		Scenario 2	
			(sum08_pge_a5_base_r1.sav) (Amps)	(%)	(sum08_pge_a5_s1_r1.sav) (Amps)	(%)	(sum08_pge_a5_s2_r1.sav) (Amps)	(%)
1	Table Mt 500/230kV bank	1122	133.1	11.9%	245.1	21.8%	280.6	25.0%
2	Table Mt - Tesla 500kV line	1600	1503.2	94.0%	1536.6	96.0%	1562.0	97.6%
3	Table Mt - Vaca Dixon 500kV line	2478	2030.2	81.9%	2073.2	83.7%	2098.6	84.7%
4	Rio Oso 230/115 kV Bk-1	120	82.2	68.5%	39.0	32.5%	41.0	34.2%
5	Rio Oso 230/115 kV Bk-2	134	81.8	61.0%	25.3	18.9%	27.6	20.6%
6	Rio Oso - Lockford 230kV line	752.1	350	46.5%	460.5	61.2%	423.9	56.4%
7	Rio Oso - Gold Hill 230kV line	825.9	552.4	66.9%	659.6	79.9%	655.3	79.3%
8	Rio Oso - Brighton 230kV line	752.1	621	82.6%	507.3	67.5%	465.6	61.9%
9	Rio Oso - Atlantic 230 kV line	825.9	694.4	84.1%	760.6	92.1%	757.1	91.7%
10	Atlantic - Gold Hill 230kv line	825.9	321.9	39.0%	494.2	59.8%	488.5	59.1%
11	Gold Hill - Lake 230kV Tie	759.8	400	52.6%	581.3	76.5%	500.5	65.9%
12	Bellota - Rancho Seco #1 230kV line	1240	528.8	42.6%	763.5	61.6%	468.9	37.8%
13	Bellota - Rancho Seco #2 230kV line	1240	528.8	42.6%	763.5	61.6%	468.9	37.8%
14	Chogo pk - Higgins 115kV line	602.5	548.5	91.0%	634.6	105.3%	630.5	104.6%

Table A2-2
Steady State Power Flow Base Case Results
(2014 Heavy Summer Base Case)

	Transmission Facilities	SN Rating (Amps)	Base		Scenario 1		Scenario 2	
			sum14_pge_a5_base_r1.sa (Amps)	(%)	sum14_pge_a5_s1_r1.sav (Amps)	(%)	sum14_pge_a5_s2_r1.sav (Amps)	(%)
1	Table Mt-500/230kV bank	1122	42.9	3.8%	83.8	7.5%	121.1	10.8%
2	Table Mt - Tesla 500kV line	1600	1386.3	86.6%	1422.7	88.9%	1446.9	90.4%
3	Table Mt - Vaca Dixon 500kV line	2478	1938.1	78.2%	1986.0	80.1%	2008.4	81.0%
4	Rio Oso 230/115 kV Bk-1	120	95.0	79.2%	40.5	33.8%	45.1	37.6%
5	Rio Oso 230/115 kV Bk-2	134	96.9	72.3%	30.1	22.5%	34.5	25.7%
6	Rio Oso - Lockford 230kV line	752.1	335.8	44.6%	459.3	61.1%	419.7	55.8%
7	Rio Oso - Gold Hill 230kV line	825.9	583.3	70.6%	698.4	84.6%	690.2	83.6%
8	Rio Oso - Brighton 230kV line	752.1	641.7	85.3%	507.7	67.5%	463.3	61.6%
9	Rio Oso - Atlantic 230 kV line	825.9	760.1	92.0%	833.0	100.9%	824.6	99.8%
10	Atlantic - Gold Hill 230kv line	825.9	296.6	35.9%	477.7	57.8%	469.7	56.9%
11	Gold Hill - Lake 230kV Tie	759.8	490.4	64.5%	716.9	94.4%	611.1	80.4%
12	Bellota - Rancho Seco #1 230kV line	1240	765.6	61.7%	1064.2	85.8%	725.2	58.5%
13	Bellota - Rancho Seco #2 230kV line	1240	765.6	61.7%	1064.2	85.8%	725.2	58.5%
14	Chcgo pk - Higgins 115kV line	602.5	n/a	<95%	654.3	108.6%	646.2	107.3%
15	Table Mt.-Rio Oso 230kV line	825.9	893.8	108.2%	783.8	94.9%	733.1	88.8%

Table A2-3
Steady State Bus Voltage
(2008 Heavy Summer Base Case)

Substation	Volt	2008 Base		2008 Scenario 1		2008 Scenario 2	
		(kV)	(p.u.)	(kV)	(p.u.)	(kV)	(p.u.)
Rio Oso	230 kV	227.4	0.99	227.9	0.99	228.8	0.99
Atlantic	230 kV	225.2	0.98	224.7	0.98	225.7	0.98
Gold Hill	230 kV	224.4	0.98	223.5	0.97	224.4	0.98
Elverta	230 kV	226	0.98	222.6	0.97	224.3	0.98
Hurley	230 kV	226.4	0.98	223	0.97	224.7	0.98
Woodland	115 kV	116.2	1.01	112.6	0.98	112.5	0.98
Davis	115 kV	117	1.02	113.3	0.99	113.1	0.98
West Sacramento	115 kV	119.4	1.04	115.9	1.01	115.8	1.01
UC Davis	60 kV	58.93	0.98	57.09	0.95	57.03	0.95
					VD (p.u.)		VD (p.u.)
					-0.5		-1.4
					0.5		-0.5
					0.9		0
					3.4		1.7
					3.4		1.7
					3.6		3.7
					3.7		3.9
					3.5		3.6
					1.84		1.9

Table A2-4
Steady State Bus Voltage
(2014 Heavy Summer Base Case)

Substation	Volt	2014 Base		2014 Scenario 1		2014 Scenario 2	
		(kV)	(p.u.)	(kV)	(p.u.)	(kV)	(p.u.)
Rio Oso	230 kV	223.5	0.97	223.3	0.97	225.6	0.98
Atlantic	230 kV	218.5	0.95	217.1	0.94	219.5	0.95
Gold Hill	230 kV	219	0.95	216.7	0.94	219.4	0.95
Elverta	230 kV	218	0.95	209.3	0.91	215.7	0.94
Hurley	230 kV	218.2	0.95	209.4	0.91	216.1	0.94
Woodland	115 kV	114.7	1.00	104.7	0.91	108.3	0.94
Davis	115 kV	115.2	1.00	105.2	0.91	109	0.95
West Sacramento	115 kV	117.4	1.02	107.9	0.94	111.6	0.97
UC Davis	60 kV	57.97	0.97	52.89	0.88	54.85	0.91
					VD (p.u.)		VD (p.u.)
					0.2		-2.1
					1.4		-1
					2.3		-0.4
					8.7		2.3
					8.8		2.1
					10		6.4
					10		6.2
					9.5		5.8
					5.08		3.12

**Attachment 3
Power Flow Study Results for 500 kV Contingencies**

Table A3-1
Post Transient Power Flow Study Results for 500 kV Contingencies
(2008 Heavy Summer Base Case)

Case	Outages Facilities	Overloaded Facilities	SE Rating (A)	Post Outage Flow					
				Base Case		Scenario 1		Scenario 2	
				(A)	(%)	(A)	(%)	(A)	(%)
1	Table Mt - Tesla 500kV line	Table Mt-Vaca Dixon 500kV line	3556	3072.6	86.4%	3143.8	88.4%	3164.4	89.0%
1	Table Mt - Tesla 500kV line	Chcgo Pk-Higgins 115kV line ³	603	n/a	<95%	649.3	107.8%	633.3	105.1%
1	Table Mt - Tesla 500kV line	Higgins-Bell pge 115kV line	603	n/a	<95%	n/a	<95%	n/a	<95%
2	Table Mt-Vaca Dixon 500kV line	Table Mt-Tesla 500kV lines	3500	2777.2	79.3%	2841.3	81.2%	2866.2	81.9%
2	Table Mt-Vaca Dixon 500kV line	Chcgo Pk-Higgins 115kV line ³	603	575.6	95.5%	666.1	110.6%	658.8	109.3%
2	Table Mt-Vaca Dixon 500kV line	Higgins-Bell pge 115kV line	603	n/a	<95%	n/a	<95%	n/a	<95%
3	Table Mt-Tesla and Table Mt-Vaca Dixon 500kV lines	Chcgo Pk-Higgins 115kV line ³	603	651.9	108.2%	747.8	124.1%	741.8	123.1%
3	Table Mt-Tesla and Table Mt-Vaca Dixon 500kV lines	Higgins-Bell pge 115kV line	603	n/a	<95%	599.5	99.5%	594.2	98.6%
3	Table Mt-Tesla and Table Mt-Vaca Dixon 500kV lines	Round Mt-Cotwd_E #3 230kV line	746	n/a	<95%	738.4	99.0%	734.2	98.5%
4	Table Mt-Tesla and Vaca Dixon-Tesla 500kV lines	Table Mt-Vaca Dixon 500kV line	3556	1048.0	29.5%	1076.5	30.3%	1081.0	30.4%
4	Table Mt-Tesla and Vaca Dixon-Tesla 500kV lines	Chcgo Pk-Higgins 115kV line ³	603	598.9	99.4%	687.4	114.1%	682.2	113.2%
4	Table Mt-Tesla and Vaca Dixon-Tesla 500kV lines	Higgins-Bell pge 115kV line	603	n/a	<95%	n/a	<95%	n/a	<95%

³ PG&E is evaluating the feasibility of replacing line switches and re-rate this line for higher rating by year 2006.

Table A3-2
 Post Transient Power Flow Study Results for 500 kV Contingencies
 (2014 Heavy Summer Base Case)

Case	Outages Facilities	Overloaded Facilities	SE Rating (A)	Post Outage Flow					
				Base Case		Scenario 1		Scenario 2	
				(A)	(%)	(A)	(%)	(A)	(%)
1	Table Mt - Tesla 500kV line	Table Mt-Vaca Dixon 500kV line	3556	2883.9	81.1%	2961.6	83.3%	2985.3	84.0%
1	Table Mt - Tesla 500kV line	Chcgo Pk-Higgins 115kV line ³	603	n/a	<95%	637.2	105.8%	615.8	102.2%
1	Table Mt - Tesla 500kV line	Higgins-Bell pge 115kV line	603	n/a	<95%	n/a	<95%	n/a	<95%
2	Table Mt-Vaca Dixon 500kV line	Table Mt-Tesla 500kV lines	3500	2583.9	73.8%	2654.2	75.8%	2675.5	76.4%
2	Table Mt-Vaca Dixon 500kV line	Chcgo Pk-Higgins 115kV line ³	603	n/a	<95%	654.0	108.5%	631.1	104.7%
2	Table Mt-Vaca Dixon 500kV line	Higgins-Bell pge 115kV line	603	n/a	<95%	n/a	<95%	n/a	<95%
3	Table Mt-Tesla and Table Mt-Vaca Dixon 500kV lines	Chcgo Pk-Higgins 115kV line ³	603	623.6	103.5%	732.7	121.6%	720.4	119.6%
3	Table Mt-Tesla and Table Mt-Vaca Dixon 500kV lines	Higgins-Bell pge 115kV line	603	n/a	<95%	n/a	<95%	n/a	<95%
3	Table Mt-Tesla and Table Mt-Vaca Dixon 500kV lines	Round Mt-Cotwd_E #3 230kV line	746	709.8	95.2%	749.2	100.5%	742.5	99.6%
4	Table Mt-Tesla and Vaca Dixon-Tesla 500kV lines	Table Mt-Vaca Dixon 500kV line	3556	1062.2	29.9%	1093.5	30.8%	1096.3	30.8%
4	Table Mt-Tesla and Vaca Dixon-Tesla 500kV lines	Chcgo Pk-Higgins 115kV line	603	n/a	<95%	665.6	110.5%	658.3	109.3%
4	Table Mt-Tesla and Vaca Dixon-Tesla 500kV lines	Higgins-Bell pge 115kV line	603	n/a	<95%	n/a	<95%	n/a	<95%

**Attachment 4
Power Flow Study Results for 230 kV Contingencies**

Table A4-1
Power Flow Study Results for Category "B" Contingencies
(2008 Heavy Summer Base Case)

Case	Outages Facilities	Overloaded Facilities	SE Rating (A)	Post Outage Flow					
				Base Case		Scenario 1		Scenario 2	
				(A)	(%)	(A)	(%)	(A)	(%)
SIE-B6	Rio Oso-Atlantic 230kV line	Rio Oso-Gold Hill 230kV line	1078	902.0	83.7%	1041.9	96.7%	1035.5	96.1%
SIE-B6	Rio Oso-Atlantic 230kV line	Chcgo Pk-Higgins 115kV line ³	602	609.5	101.2%	698.4	115.9%	693.3	115.1%
SIE-B6	Rio Oso-Atlantic 230kV line	Higgins-Bell pge 115kV line	602	n/a	<95%	n/a	<95%	n/a	<95%
SIE-B7	Rio Oso-GoldHill 230kV line	Rio Oso-Atlantic 230kV line	1078	993.0	92.1%	1118.0	103.7%	1111.7	103.1%
SIE-B7	Rio Oso-GoldHill 230kV line	Atlantic-GoldHill 230kV line	977	n/a	<95%	n/a	<95%	n/a	<95%
SIE-B7	Rio Oso-GoldHill 230kV line	Chcgo Pk-Higgins 115kV line ³	602	602.7	100.0%	700.5	116.3%	695.2	115.4%
SIE-B7	Rio Oso-GoldHill 230kV line	Higgins-Bell pge 115kV line	602	n/a	<95%	n/a	<95%	n/a	<95%
SIE-B1	Rio Oso-Brighton 230kV line	Rio Oso-Gold Hill 230kV line	1078	n/a	<95%	n/a	<95%	n/a	<95%
SIE-B1	Rio Oso-Brighton 230kV line	Rio Oso-Atlantic 230kV line	1078	n/a	<95%	n/a	<95%	n/a	<95%
SIE-B1	Rio Oso-Brighton 230kV line	Rio Oso-Lockford 230kV line	864	n/a	<95%	n/a	<95%	n/a	<95%
SIE-B2	Rio Oso-Lockford 230kV line	Rio Oso-Gold Hill 230kV line	1078	n/a	<95%	n/a	<95%	n/a	<95%
SIE-B2	Rio Oso-Lockford 230kV line	Rio Oso-Atlantic 230kV line	1078	n/a	<95%	n/a	<95%	n/a	<95%
SIE-B2	Rio Oso-Lockford 230kV line	Rio Oso-Brighton 230kV line	864	n/a	<95%	n/a	<95%	n/a	<95%

Table A4-2
Power Flow Study Results for Category "B" Contingencies
(2014 Heavy Summer Base Case)

Case	Outages Facilities	Overloaded Facilities	SE Rating (A)	Post Outage Flow					
				Base Case		Scenario 1		Scenario 2	
				(A)	(%)	(A)	(%)	(A)	(%)
SIE-B6	Rio Oso-Atlantic 230kV line	Rio Oso-Gold Hill 230kV line	1078	962.4	89.3% ⁴	1110.6	103.0%	1098.4	101.9%
SIE-B6	Rio Oso-Atlantic 230kV line	Chcgo Pk-Higgins 115kV line ³	602	624.9	103.7%	719.8	119.5%	700.7	116.3%
SIE-B6	Rio Oso-Atlantic 230kV line	Higgins-Bell pge 115kV line	602	n/a	<95%	n/a	<95%	n/a	<95%
SIE-B7	Rio Oso-GoldHill 230kV line	Rio Oso-Atlantic 230kV line	1078	1078.4	100.0%	1211.3	112.4%	1202.5	111.5%
SIE-B7	Rio Oso-GoldHill 230kV line	Atlantic-GoldHill 230kV line	977	n/a	<95%	n/a	<95%	n/a	<95%
SIE-B7	Rio Oso-GoldHill 230kV line	Chcgo Pk-Higgins 115kV line ³	602	614.3	102.0%	719.2	119.4%	713.9	118.5%
SIE-B7	Rio Oso-GoldHill 230kV line	Higgins-Bell pge 115kV line	602	n/a	<95%	n/a	<95%	n/a	<95%
SIE-B1	Rio Oso-Brigton 230kV line	Rio Oso-Gold Hill 230kV line	1078	n/a	<95%	n/a	<95%	n/a	<95%
SIE-B1	Rio Oso-Brigton 230kV line	Rio Oso-Atlantic 230kV line	1078	n/a	<95%	n/a	<95%	n/a	<95%
SIE-B1	Rio Oso-Brigton 230kV line	Rio Oso-Lockford 230kV line	864	n/a	<95%	n/a	<95%	n/a	<95%
SIE-B2	Rio Oso-Lockford 230kV line	Rio Oso-Gold Hill 230kV line	1078	n/a	<95%	n/a	<95%	n/a	<95%
SIE-B2	Rio Oso-Lockford 230kV line	Rio Oso-Atlantic 230kV line	1078	n/a	<95%	n/a	<95%	n/a	<95%
SIE-B2	Rio Oso-Lockford 230kV line	Rio Oso-Brigton 230kV line	864	n/a	<95%	n/a	<95%	n/a	<95%

⁴ Based on the results for 2008 and 2014 base cases, the emergency loading is expected to over 100% by 2026.

Table A4-3
 Power Flow Study Results for Category "C" Contingencies
 (2008 Heavy Summer Base Case)

Case	Outages Facilities	Overloaded Facilities	SE Rating (A)	Post Outage Flow					
				Base Case		Scenario 1		Scenario 2	
				(A)	(A)	(A)	(A)	(A)	(A)
SIE-C2	Rio Oso-Atlantic and Rio Oso GoldHill 230kV line	Rio Os 230/115kV Bank #1	120	156.8	130.7%	114.6	95.5%	116.6	97.2%
SIE-C2	Rio Oso-Atlantic and Rio Oso GoldHill 230kV line	Rio Os 230/115kV Bank #2	161	167.8	104.0%	n/a	<95%	n/a	<95%
SIE-C2	Rio Oso-Atlantic and Rio Oso GoldHill 230kV line	Rio Oso-Lincoln 115kV line	1124	n/a	<95%	1176.5	104.7%	1162.2	103.4%
SIE-C2	Rio Oso-Atlantic and Rio Oso GoldHill 230kV line	Plsnt Gr-Formica 115kV line	1124	n/a	<95%	1101.2	98.0%	1091.7	97.1%
SIE-C2	Rio Oso-Atlantic and Rio Oso GoldHill 230kV line	Ultra Jt-Formica 115kV line	1124	n/a	<95%	1109.1	98.7%	1099.4	97.8%
SIE-C2	Rio Oso-Atlantic and Rio Oso GoldHill 230kV line	Rio Oso-Brighton 230kV line	864	857.2	99.2%	n/a	<95%	n/a	<95%
SIE-C2	Rio Oso-Atlantic and Rio Oso GoldHill 230kV line	Chcgo pk-Higgins 115kV line	602	772.5	128.2%	885.7	147.0%	877.9	145.7%
SIE-C2	Rio Oso-Atlantic and Rio Oso GoldHill 230kV line	Higgins-Bell pge 115kV line	602	611.6	101.5%	723.4	120.1%	716.5	118.9%
SIE-C2	Rio Oso-Atlantic and Rio Oso GoldHill 230kV line	Dtch fl1-Chcgo Pk 115kV line	739	n/a	<95%	706.4	95.6%	n/a	<95%
SIE-C2	Rio Oso-Atlantic and Rio Oso GoldHill 230kV line	Drum - Dtch Fl1 115kV line	561	n/a	<95%	606.0	108.1%	599.9	107.0%
SIE-C3	Rio Oso-Brighton and Rio Oso-Lockford 230kV lines	Rio Oso-Atlantic 230kV line	1077	n/a	<95%	n/a	<95%	n/a	<95%
SIE-C3	Rio Oso-Brighton and Rio Oso-Lockford 230kV lines	Rio Os 230/115kV Bank #1	120	118.4	98.7%	n/a	<95%	n/a	<95%
SIE-C3	Rio Oso-Brighton and Rio Oso-Lockford 230kV lines	Chcgo pk-Higgins 115kV line	602	n/a	<95%	683.2	113.4%	675.5	112.1%

Table A4-3 (continue)
 Power Flow Study Results for Category "C" Contingencies
 (2008 Heavy Summer Base Case)

SIE-C7	Atlantic-GoldHill and Rio Oso-GoldHill 230kV line	Chcgo pk-Higgins 115kV line	602	795.8	132.1%	967.6	160.6%	958.4	159.1%
SIE-C7	Atlantic-GoldHill and Rio Oso-GoldHill 230kV line	Higgins-Bell pge 115kV line	602	637.0	105.7%	807.5	134.0%	799.3	132.7%
SIE-C7	Atlantic-GoldHill and Rio Oso-GoldHill 230kV line	Dtch fl1-Chcgo Pk 115kV line ³	739	n/a	<95%	791.8	107.1%	783.1	106.0%
SIE-C7	Atlantic-GoldHill and Rio Oso-GoldHill 230kV line	Drum - Dtch F11 115kV line ³	561	n/a	<95%	694.0	123.8%	685.9	122.3%

Table A4-4
Power Flow Study Results for Category "C" Contingencies
(2014 Heavy Summer Base Case)

Case	Outages Facilities	Overloaded Facilities	SE Rating (A)	Post Outage Flow					
				Base Case		Scenario 1		Scenario 2	
				(A)	(A)	(A)	(A)	(A)	(A)
SIE-C2	Rio Oso-Atlantic and Rio Oso GoldHill 230kV line	Rio Os 230/115kV Bank #1	120	176.5	147.1%	132.7	110.6%	134.7	112.3%
SIE-C2	Rio Oso-Atlantic and Rio Oso GoldHill 230kV line	Rio Os 230/115kV Bank #2	161	190.1	117.9%	n/a	<95%	n/a	<95%
SIE-C2	Rio Oso-Atlantic and Rio Oso GoldHill 230kV line	Rio Oso-Lincoln 115kV line ⁵	1124	n/a	<95%	1288.6	114.6%	1268.7	112.9%
SIE-C2	Rio Oso-Atlantic and Rio Oso GoldHill 230kV line	Pisnt Gr-Formica 115kV line ⁵	1124	n/a	<95%	1179.4	104.9%	1165.6	103.7%
SIE-C2	Rio Oso-Atlantic and Rio Oso GoldHill 230kV line	Ultra Jt-Formica 115kV line ⁵	1124	n/a	<95%	1187	105.6%	1172.9	104.4%
SIE-C2	Rio Oso-Atlantic and Rio Oso GoldHill 230kV line	Rio Oso-Brighton 230kV line	864	900.2	104.2%	n/a	<95%	n/a	<95%
SIE-C2	Rio Oso-Atlantic and Rio Oso GoldHill 230kV line	Chcgo pk-Higgins 115kV line	602	799.6	132.7%	926.2	153.7%	914.5	151.8%
SIE-C2	Rio Oso-Atlantic and Rio Oso GoldHill 230kV line	Higgins-Bell pge 115kV line	602	620.5	103.0%	745	123.7%	735	122.0%
SIE-C2	Rio Oso-Atlantic and Rio Oso GoldHill 230kV line	Dtch fl1-Chcgo Pk 115kV line ³	739	n/a	<95%	746.5	101.0%	736.8	99.7%
SIE-C2	Rio Oso-Atlantic and Rio Oso GoldHill 230kV line	Drum - Dtch F11 115kV line ³	561	n/a	<95%	646.2	115.2%	637.9	113.8%
SIE-C3	Rio Oso-Brighton and Rio Oso-Lockford 230kV lines	Rio Oso-Atlantic 230kV line	1077	n/a	<95%	1077.5	100.1%	1052.7	97.8%
SIE-C3	Rio Oso-Brighton and Rio Oso-Lockford 230kV lines	Rio Os 230/115kV Bank #1	120	134	111.7%	n/a	<95%	n/a	<95%
SIE-C3	Rio Oso-Brighton and Rio Oso-Lockford 230kV lines	Chcgo pk-Higgins 115kV line	602	n/a	<95%	699.8	116.2%	691.1	114.7%

⁵ The proposed Palermo - Rio Oso 115 kV line Project (T686) would install a special protection scheme to open the 115 kV path for a Rio Oso-Atlantic and Rio Oso-Gold Hill 230 kV double-line outage.

Table A4-4 (continue)
 Power Flow Study Results for Category "C" Contingencies
 (2014 Heavy Summer Base Case)

SIE-C7	Atlantic-GoldHill and Rio Oso-GoldHill 230kV line	Chcgo pk-Higgins 115kV line ³	602	799.6	132.7%	991.4	164.6%	979.7	162.6%
SIE-C7	Atlantic-GoldHill and Rio Oso-GoldHill 230kV line	Higgins-Bell pge 115kV line ³	602	624.6	103.7%	814.9	135.3%	804.5	133.5%
SIE-C7	Atlantic-GoldHill and Rio Oso-GoldHill 230kV line	Dtch fl1-Chcgo Pk 115kV line ³	739	n/a	<95%	817.7	110.6%	806.7	109.2%
SIE-C7	Atlantic-GoldHill and Rio Oso-GoldHill 230kV line	Drum - Dtch F11 115kV line ³	561	n/a	<95%	721.7	128.7%	711.6	126.9%

Attachment 5
Reactive Margin Study Results

Table A5-1
Reactive Margin Study Results
(2010 Heavy Summer Base Case for Loss of Two Palo Verde Units)

500kV Bus	MVAR	kV	Delta kV	MVAR	kV	Delta kV	Diff (mvar)	MVAR	kV	Delta kV	Diff (mvar)
Round Mt	1359	452.1	65.6	1246	455.8	60.9	-113	1358	451.6	65.6	-1
Table Mt.	1394	461.0	52.2	1359	454.8	57.3	-35	1552	441.7	70.9	158
Tesla	2192	457.6	57.2	1775	473.1	40.2	-417	2230	456.5	57.2	38
Tracy	2042	464.3	54.1	1705	472.3	44.5	-337	2082	460.6	56.7	40
Metcalf	2255	427.8	89.7	2030	442.2	74.6	-225	2262	423.3	93.7	7

Attachment 6 EASOP Analysis Economic Evaluation Over 20-Year Study Period (\$000) Transmission Upgrades for SMUD Annexation Subtitle

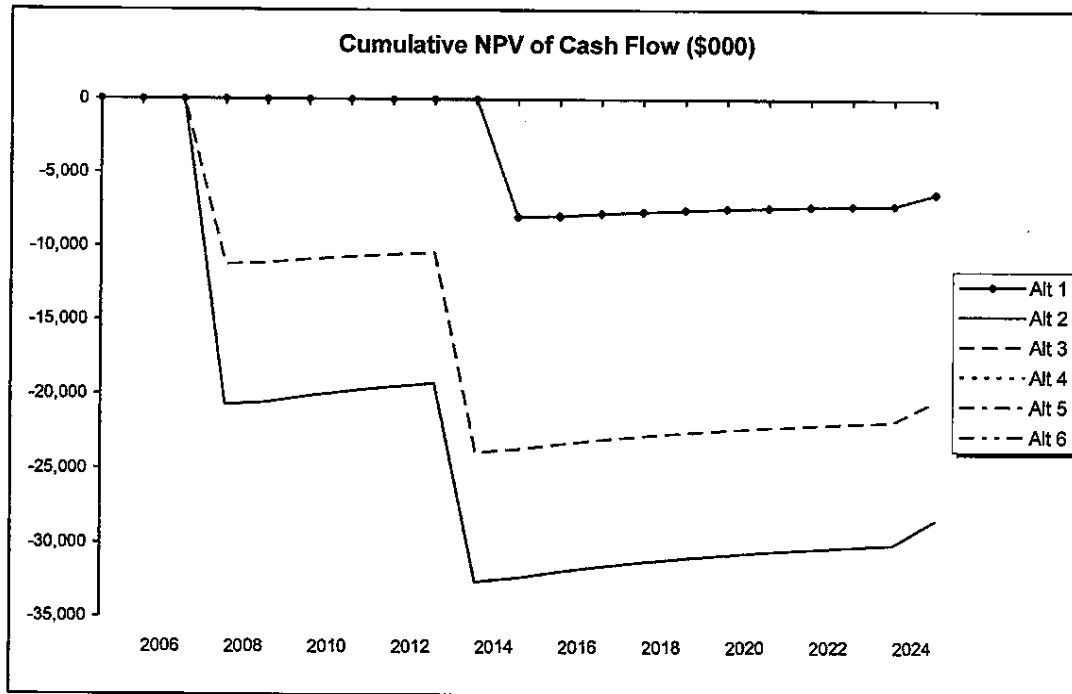
Study Period: 20 years
Discount Rate: 7.6%

First Year of Study: 2005
Cost Estimate Year: 2005

Kang-Ling Ching, 223-7637
EASOP 2005 Standard Edition

Alternative (enter titles to see financial results)	Cash Flow Measures			B/C Ratio	PVRR
	NPV	ROE	Payback		
1. Status Quo	-6,390	-	-	-	10,785
2. SMUD Annex Yolo County by 2008 (Scenario 1)	-28,432	n/a	never	n/a	47,986
3. SMUD Annex Yolo County by 2008 (Scenario 2)	-20,424	n/a	never	n/a	34,472
4.					
5.					
6.					

Net present value is the primary financial measure used in making investment decisions. Return on equity, payback period, and benefit-cost ratio are measured relative to status quo.



**Transmission Upgrades for SMUD Annexation
Subtitle
Alternative 1 - Status Quo**

Project Expenditures Over 20-Year Study Period (2005-2024) in \$000

Year	Description	Expend	Esc%	Type	Life *	Salvage% *	Escalated Expend	NPV
2015	Recond Rio Oso-Atlantic 230kV line	13,000	2.5	etd	40		16,641	-6,390
			2.5				0	0
			2.5				0	0
			2.5				0	0
			2.5				0	0
			2.5				0	0
							<u>0</u>	<u>0</u>
							16,641	-6,390

* Life and salvage fields are ignored when expenditure type is an expense (exp).

Operating Expenses (+) and Revenues (-) Over 20-Year Study Period (2005-2024) in \$000

Year	a	b	c	d	Description	Esc%	
2005					a.	2.5	0
2006					b.	2.5	0
2007					c.	2.5	0
2008					d.	2.5	0
2009							<u>0</u>
2010							
2011							
2012							
2013							
2014							
2015							
2016							
2017							
2018							
2019							
2020							
2021							
2022							
2023							
2024							
2025							
2026							
2027							
2028							
2029							
2030							
2031							
2032							
2033							
2034							

Total NPV (\$000)	-6,390
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Comments (press alt+enter to skip to new line)

Transmission Upgrades for SMUD Annexation
Subtitle
Alternative 2 - SMUD Annex Yolo County by 2008 (Scenario 1)

Project Expenditures Over 20-Year Study Period (2005-2024) in \$000

Year	Description	Expend	Esc%	Type	Life *	Salvage% *	Escalated Expend	NPV
2008	Recond Rio Oso-Atlantic 230kV line	13,000	2.5	etd	40		14,000	-9,463
2014	Recond RioOso-GoldHill 230kV line	21,000	2.5	etd	40		26,226	-10,961
2008	Install Shunt Capacitors	11,000	2.5	etd	40		11,846	-8,008
			2.5				0	0
			2.5				0	0
			2.5				0	0
							<u>0</u>	<u>0</u>
							52,071	-28,432

* Life and salvage fields are ignored when expenditure type is an expense (exp).

Operating Expenses (+) and Revenues (-) Over 20-Year Study Period (2005-2024) in \$000

Year	a	b	c	d	Description	Esc%	
2005					a.	2.5	0
2006					b.	2.5	0
2007					c.	2.5	0
2008					d.	2.5	0
2009							<u>0</u>
2010							
2011							
2012							
2013							
2014							
2015							
2016							
2017							
2018							
2019							
2020							
2021							
2022							
2023							
2024							
2025							
2026							
2027							
2028							
2029							
2030							
2031							
2032							
2033							
2034							

Total NPV (\$000) -28,432

Comments (press alt+enter to skip to new line)

**Transmission Upgrades for SMUD Annexation
Subtitle
Alternative 3 - SMUD Annex Yolo County by 2008 (Scenario 2)**

Project Expenditures Over 20-Year Study Period (2005-2024) in \$000							Escalated	
Year	Description	Expend	Esc%	Type	Life *	Salvage% *	Expend	NPV
2008	Recond Rio Oso-Atlantic 230kV line	13,000	2.5	etd	40		14,000	-9,463
2014	Recond RioOso-GoldHill 230kV line	21,000	2.5	etd	40		26,226	-10,961
			2.5				0	0
			2.5				0	0
			2.5				0	0
			2.5				0	0
							<u>40,226</u>	<u>-20,424</u>

* Life and salvage fields are ignored when expenditure type is an expense (exp).

Operating Expenses (+) and Revenues (-) Over 20-Year Study Period (2005-2024) in \$000

Year	a	b	c	d	Description	Esc%	
2005					a.	2.5	0
2006					b.	2.5	0
2007					c.	2.5	0
2008					d.	2.5	0
2009							<u>0</u>
2010							
2011							
2012							
2013							
2014							
2015							
2016							
2017							
2018							
2019							
2020							
2021							
2022							
2023							
2024							
2025							
2026							
2027							
2028							
2029							
2030							
2031							
2032							
2033							
2034							

Total NPV (\$000)	-20,424
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Comments (press alt+enter to skip to new line)

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Career Summary

- 22 years of experience in transmission planning at PG&E.
- 2-1/2 years of supervising planning engineer experience.
- Familiar with PG&E and WECC transmission system.
- Familiar with WECC and NERC policies; standards, criteria and procedures.
- Experience with power flow, transient stability, post-transient power flow and voltage collapse analysis using GE power system simulation programs.

Professional Experience

**Pacific Gas and Electric Company,
Electric T&D Engineering, January 1984 to Present**

Senior Consulting Electrical Engineer, Strategic & Technical Services, 2002 to Present

- 500 kV Transmission System Planning
Develop short-term conductor ratings for 500 kV and some critical 230 kV lines to improve asset utilization. Perform bulk system analysis for various projects; e.g. Big Creek Interconnection Study, Tehachapi Conceptual Transmission Plan, and power flow study for SMUD Annexation.
- Represent PG&E in the WECC System Review Work Group.
- Transmission Project Development
Coordinate the Path 26 Upgrade Project (Increase North-to-south ratings to 3400 MW and 3700 MW), Metcalf SPS project, and Corcoran 115 kV Bus Reinforcement Project.

Senior Planning Engineer, Strategic & Technical Services, 2000 to 2002

- 500 kV Transmission System Planning
Coordinated power flow base case development and completed PG&E's 500 kV Transmission Assessment Studies for 2000 and 2001.
- Transmission Project Development
Completed planning studies for Metcalf SPS Project and Path 26 RAS Project,

Supervising Planning Engineer, Southern Area Group, 1997 to 2000

- Coaching and Supervision
Provide direction and technical support to four transmission planning engineers and be responsible for planning the transmission system in Yosemite, Fresno, Los Padres and Kern Divisions. Provide technical support to Grid Customer Services and Divisions.

Senior Planning Engineer, Northern Area Group, 1993 to 1997

- Bulk Transmission Planning
Analyzed PG&E's bulk transmission system and performed post-transient voltage collapse studies; e.g., Sacramento Valley Reactive Margin Study, Bay Area Interim 500/230 kV Bank Study and Path 15 North-to-South Transfer Capability Study. Coordinate the WECC base cases for PG&E Control Area.
- Area Transmission Planning
Analyzed and projected area load growth. Analyzed area transmission system and identified capacity deficiency. Developed reinforcement alternatives to relieve thermal overload and improve system voltage. Performed system impact studies, coordinated cost estimates, conducted economic analysis and prepared project justification for Management approval.

Planning Engineer, System Planning Section, 1988 to 1993

- Contract Analysis
Conducted bulk transmission studies and developed technical documentation to support contract negotiation.
- Strategic Planning

Coordinated transmission system studies for QF Cost Reduction Project and Energy Loss Base Cases. Tested LOCATION Program and quantify Location attribute tables for the multi-attribute bidding system. Developed Loss Adjustment Factors Table for 1993 General Rate Case.

Planning Engineer, Dynamic Analysis Section, 1984 to 1988

- **Dynamic Stability Study**
Performed dynamic stability analyses; e.g. the 3200 MW Pacific AC Intertie Upgrade, Los Banos-Gates Transmission Project, South-of-Tesla Reinforcement Project, Humboldt Area Stability Study and Ukiah Area Stability Study.

Other Utility and Industrial Experiences

- **Transmission Planning Engineer, Pennsylvania Power & Light, Allentown, Pennsylvania**
Analyzed steady state and dynamic performance of PPL's bulk transmission system.
- **Substation Design Engineer, Brown & Roots Engineering Company, Houston, Texas**
Designed substation and industrial distribution system for petro-chemical plants.
- **Electrical Engineer, Taiwan Power Company, Taiwan**
Supervised several construction teams for the installation of motor control center, switchgear, cable tray and underground conduit for a 340 MW steam generation project in Taiwan

Professional License

Registered Professional Engineer in Electrical Engineering, the State of California

Education

MS in Electrical Engineering, the U. of Texas at Arlington
BS in Electrical Engineering, Washington State U.