ALAMEDA
MUNICIPAL POWER
A Department of the City of Alameda

ISO Board of Governors

P.O. Box 639014

Folsom, CA 95763-9014

March 15, 2018

Re: Alameda Municipal Power Request on the 2017-2018 Transmission Plan

Dear ISO Board of Governors:

The CAISO Board is scheduled to make a decision on the ISO 2017-2018 Transmission Plan as part of the March 22, 2018 Board meeting. We are writing to you to request that the board withhold approval of the "Oakland Clean Energy Initiative (OCEI)" [1] until AMP's concerns expressed in our stakeholder comments of October 6, 2017 are addressed (attached).

Furthermore, in addition to these numerous deficiencies of the OCEI contained in AMP's comments, the draft plan currently leaves open the economic merits of the OCEI, stating:

> "The ISO has identified that additional economic evaluation is necessary to finalize its recommendation in this transmission plan and will seek to conclude that analysis within this planning cycle".[2]

As such, it is not perfectly clear to us what approval of the 2017-2018 Transmission Plan would mean in regards the OCEI, and out of an abundance of caution, we are requesting an affirmative finding on this project.

Alameda Municipal Power (AMP) has been working with PG&E since our comments were submitted, to resolve the reliability impacts and faulty assumptions that were relied upon by both the CAISO and PG&E to develop and recommend the OCEI. Unfortunately, efforts to date have not resolved our differences.

One of the many faulty assumptions is the belief that the CAISO and PG&E can rely on AMP transferring internal AMP load in order for PG&E/CAISO to meet minimum reliability criteria under certain peak load and contingency outage conditions. We are unaware of any other situation where a transmission customer, such as AMP, is forced to put its internal customers at risk through unplanned rapid internal switching operations as part of a completed transmission upgrade solution. While such switching may be infrequently required to respond to unforeseen system emergencies, the long term transmission plan

[1] See section 2.5.5.3 and 2.5.5.4 of the 2017-2018 Transmission Plan
[2] Draft 2017-2018 ISO Transmission Plan, p. 129

should not rely on this type of customer support because the plan fails to completely address all of the reliability issues in the first place.

AMP has provided notice to PG&E (copy attached) that their reliance on AMP being able to switch internal loads as planned under the OCEI is unrealistic. We wanted to make sure that the Board was aware of this fatal flaw in the project assumptions and associated consequences prior to your potential approval of the OCEI as a component of the 2017-2018 Transmission Plan approval.

We believe projects and efforts as embodied in the OCEI are necessary alternatives to traditional transmission projects to help keep transmission rates down. We applaud and encourage this effort. However, as the CAISO and the transmission owners move to implement this new policy objective, it is not unreasonable to expect that there will be some bumps in the road that will need to be addressed, and we believe this project represents one of those bumps in the road. In addition, it is important that any solutions do not require a municipal utility to bear a disproportionate share of the risk, especially those who have been paying the Transmission Access Charge for many years and have been advocating for reliability improvements for decades.

Alameda is ready to work with the parties to ensure the OCEI is robust enough to meet Federal Energy Regulatory Commission (FERC) standards. As the CAISO is well aware, FERC is extremely interested in grid reliability and resiliency[3] and may share Alameda's concerns with the current proposal. We thank you for considering our request, and look forward to continuing our discussions to improve the OCEI.

Respectfully,

Nico Procos
General Manager
Alameda Municipal Power

[3] Grid Resilience in Regional Transmission Organizations and Independent System Operators (Docket No. AD18-7-000)

Alameda Municipal Power Comments on the 2017-18 Transmission Planning Process Preliminary Reliability Assessment Results and PTO Request Window Submissions

Alameda Municipal Power (AMP) appreciates the opportunity to comment during the development of the 2017-18 Transmission Plan. The comments and questions below address focus on the Oakland Reliability Proposal (Proposal) presentation made by PG&E at the CAISO Stakeholder meeting on September 21-22, 2017.

Issue Summary

The existing Downtown/West Oakland Area is made up of two sub-areas, each fed by separate 115 kV networks. Each sub-area is primarily fed from Moraga Substation, though with support from Sobrante Substation in the northern sub-area and Eastshore Substation in the South sub-area. The stations served in each of these sub-areas are identified in Table 1. AMP's Cartwright Substation is normally served from PG&E Station C and AMP's Jenny Substation from PG&E Station J, so AMP has load served from each of the sub-areas. AMP also has the ability to transfer load so that all load is temporarily served from either Stations C or J, however this is an unreliable operational state as a single contingency can black out all the service to the island.

Table 1

Sub-area	Northern	Southern
Stations	Stations K, X, D, C, L, Cartwright (AMP) Port of Oakland and Schnitzer Steel)	Stations L, J, Edes, Grant, Jenny(AMP).

To meet the Planning Standards, the northern sub-area depends on aging local generation and Special Protection Systems (SPSs) that drop load. The southern area, while not dependent on local generation, does also have a SPS to drop load. For the northern sub-area SPSs, AMP load is the *only* load at risk of being dropped. For the southern sub-area, AMP was initially the only load to be dropped, though this SPS was recently modified to add three PG&E loads such that each of the four loads would be rotated into the SPS.

The CAISO Planning Standards were recently revised to no longer allow the long-term reliance on load dropping to meet the Planning Standards in high density urban areas such as Oakland. Also, both the Dynegy CTs and NCPA CTs will have reached their 40-year planning life within the TPP planning horizon.

AMP has experienced a number of operating issues with the existing SPS and load transfer arrangements that have reduced the reliability of service specifically to the AMP load. AMP

anticipates that this expected loss of local generation will further adversely impact the quality of service that AMP receives and has repeatedly requested that a long-term transmission plan be developed to reliably serve the East Bay area.

In the 2011-12 Transmission Planning cycle, the CAISO approved PG&E's proposed East Shore - Oakland J 115 kV Reconductoring Project with a forecast completion date of May 2015. With this upgrade, the CAISO and PG&E assert that the southern area will comply with the Planning Standards without reliance on a load dropping SPS. This project has been repeatedly delayed and is currently forecasted to be complete in 2021.

PG&E's Oakland Reliability Proposal

At the September 22 Stakeholder Meeting, PG&E presented its Oakland Reliability Proposal to address the reliability deficiencies in the northern sub-area. The Proposal includes limited transmission upgrades (circuit breaker additions in Moraga and Station X substations and rerating the Moraga-Station K 115 kV circuits). The remainder of the reliability need is to be met by Distributed Energy Resources (DERs) such as additional Energy Efficiency (EE), Distributed Generation (DG) and Energy Storage (ES) as well as post-contingency transferring of AMP load from Station C to Station J.

AMP's Concern

While AMP generally supports the consideration of using local resources to help mitigate the CAISO and PG&E's rapidly increasing Transmission Access Charge costs, AMP has many concerns with the Proposal. Foremost, the PG&E Proposal disadvantages municipal wholesale customers in Alameda and at the Port of Oakland from a reliability perspective, relative to PG&E's own retail customers.

1. AMP would carry a disproportionate share (100%) of the proposed operational load transfers. Such transfers place the AMP load at risk during the initial transfer process, following the transfer by having AMP reduced to a single source, and during the transfer to return the service to its normal configuration. This initial transfer must be done with no warning and completed with 30 minutes.[1] AMP is not aware of any other transmission planning effort that relies on a customer transferring load in the middle of contingency as meeting transmission reliability planning criteria. While PG&E and AMP have a working draft of an operating agreement to allow for such actions to take place, the agreement was not created in the context of addressing transmission planning requirements, nor has PG&E created procedures as to how this load transfer would be accomplished during an emergency or practiced how this would be accomplished.

[1] Presumably this 30 minute window also includes problem identification by PG&E and the CAISO, solution identification from the portfolio of options proposed by PG&E, communication with AMP, switching by AMP, and verification by PG&E and CAISO. Therefore the time available to AMP from time of initial notification to perform the switching is expected to be much less than 30 minutes.

2. There has been no assurance that either the proposed project or the East Shore - Oakland J 115 kV Reconductoring Project will result in the removal of the SPS equipment. Discussions with PG&E have suggested that such equipment may remain in place as a "safety net." This concerns AMP in that the mere presence of a SPS requires regular testing and maintenance, which historically has created reliability issues experienced primarily by AMP. Secondly, the need to maintain such equipment as a safety net indicates a lack of confidence in the veracity of the Proposal. Again, these SPSs disproportionate impact the service to AMP and under the CAISO Planning Standards should be removed.
3. The current proposal lacks critical operational detail as to how the Proposal would be implemented. While PG&E proposes a portfolio of options to reduce the critical facility loading, AMP is concerned that, as the most rapid and easily implemented solution, the tendency will be to call on load transfers first. This again would place disproportionate burden on AMP to mitigate this PG&E transmission reliability deficiency.
4. AMP lacks the operational visibility into the PG&E system to understand when it may be at risk for operator action or even at risk of load interruption. This lack of situational awareness makes AMP unnecessarily exposed to the need for sudden action and endangers the efficacy of the Proposal's dependence on AMP load transfers.
5. The Proposal lacks mandatory quarterly reporting on the performance of all non-traditional Proposal components. Such reporting should include, but not limited to:
    a. Specific identification of the preferred set of resources that will be used to implement the Proposal and attestations that the supporting contracts have been executed
    b. Completion status of operational procedures associated with each preferred resource needed to implement the Proposal
    c. Performance reporting
        i. The frequency of preferred resource use to address transmission contingencies serving the sub-area.
        ii. Numbers of successful and failed deployments
        iii. Hours and magnitude of emergency overload conditions incurred
        iv. Customer load hours interrupted due to failures of preferred resources or failures of operational practices developed as part of the Proposal. Note: customer loads should be calculated as the number of customers within Alameda, the Port of Oakland and Schnitzer Steel.
    d. Procurement status of the front of the meter preferred resources that will be used in the Proposal
    e. Development of a project schedule that identifies the removal of all SPSs associated with the sub-areas, along with an attestation that the SPSs have been removed

f. Development of a critical path back up plan that identifies how design, permitting and construction will be accomplished by 2022 in the event the experimental Proposal is terminated based on preferred resource cost (making the project uneconomic) or unavailability, thus rendering the Proposal infeasible.

In addition to the above concerns on the reliance on AMP load transfers and AMP load dropping, AMP has additional concerns such as:

1. Lack of a coherent publically available substation design criteria. NCPA has filed an order 890 complaint against PG&E because some 60% of PG&E's transmission projects, where costs are recovered through the CAISO TAC charge, were not undergoing any type of external stakeholder review. While efforts to develop a transmission planning process for these projects is still in development, AMP understands that NCPA staff remain concerned that substation design criteria for rehabilitation projects being performed outside of the CAISO TPP are significantly upgraded over what PG&E has proposed in this project, providing greater reliability and resiliency for PG&E's retail customers as opposed to what has been proposed here for PG&E's municipal wholesale customers.
2. AMP is concerned that the load forecast driving the quantity of Preferred Resources procured is understated. PG&E has indicated that it expects the load served from Stations L and C to peak in 2022 and decline thereafter. Considering only the non-PG&E load within this sub-area, one needs to look no further than vast amount of undeveloped ex-military property, or to the types of energy uses/transportation electrification potential at the Port of Oakland to be concerned that the PG&E load forecast has not fully considered the load potential of these non-PG&E loads.
3. The Project's preferred portfolio contains extremely ambitious DG and EE targets. The preferred portfolio relies on base case DG and EE increases of approximately 25-30 MW installed during the next 5-year period *over and above* the targets built into the base load forecast. In addition, with the launch of the Alameda County CCA, East Bay Clean Energy, it is unclear who will have ultimate responsibility to achieve these results and as such PG&E should not be making commitments at this time.

AMP Position on the PG&E's Oakland Reliability Proposal

While AMP generally encourages efforts to mitigate the rising pressure on the TAC, AMP questions the wisdom of PG&E's initial effort of such an experimental program in a critical area of high visibility. Because of the above-mentioned deficiencies and disproportionate reliability burden that would be placed on AMP compared to other customers in the area, AMP cannot support the Oakland Clean Energy Proposal as currently described with all of the attendant uncertainty surrounding both the composition of the preferred resources and operational procedures that will be required to make the project work.

AMP recommends that the CAISO reject this project in favor of a project that will provide appropriate Transmission Service reliability and resiliency levels to the municipal wholesale customers in the Downtown/West Oakland Area.

If you have any questions concerning these comments, please contact
Alan Hanger (510-814-6403 and hanger@alamedamp.com)

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December 28, 2017

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SUBJECT: Notice of Need to Modify Operating Agreement ("OA") between Pacific Gas and Electric (PG&E) and Alameda Municipal Power (AMP), Effective August 15, 2011

Gentlemen:

PG&E has informed the Northern California Power Agency and AMP that the Oakland power plant is shutting down. The Oakland power plant provides reliability service to the Oakland area. PG&E has proposed to meet the reliability needs of the Oakland area including PG&E's service to its customer AMP with nonconventional resources called the Oakland Reliability Proposal. As part of a joint review of PG&E's Oakland Reliability Proposal.

Pacific Gas and Electric Company
December 28, 2017

As part of a joint review of PG&E's Oakland Reliability Proposal (meeting notice attached), PG&E representatives in attendance made reference to the OA (copy attached) as being an enforceable agreement that PG&E intends to rely upon to maintain reliable electric service in the Oakland area. Further, PG&E represented that it will be relying upon this OA as a component of the Oakland Reliability Proposal to meet PG&E's operating obligations under certain WECC N-1-1 contingency criteria.

NCPA pointed out to PG&E at the second meeting on this same topic that the OA could not be used to substitute for PG&E's obligation to provide reliable transmission service to AMP. Furthermore, AMP and NCPA have reviewed the OA and determined it needs to be revised or replaced. First, the OA was never intended to provide reliability services to PG&E at the levels contemplated by PG&E's Oakland Reliability Proposal. Second, the OA was drafted to support operations under the now superseded 2002 Interconnection Agreement between PG&E, NCPA, AMP and other parties (see pages 1-2 of the OA). All parties are operating under the 2015 Interconnection Agreement (IA) between the same parties.[1] Third, PG&E has not adhered to the terms of the OA.

Significant elements of the OA that provide benefit to AMP, which formed the basis for AMP entering into the OA, are not and have not been met by PG&E since the OA was established:

- Long Range Plan – Neither AMP nor NCPA has received a single quarterly update of PG&E's long-range outage plan from a PG&E account representative, despite AMP having asked for this type of information pursuant to the OA. Separately, NCPA and its members have had similar difficulties in obtaining outage planning information requests that were made pursuant to both the 2002 and 2015 IAs relative to outages that impacted NCPA and member facilities.
- Near Term Outage Plans – the "parties" that will discuss outage plans by the 15th of each month are not defined, but neither AMP nor NCPA has been contacted by PG&E to discuss outage plans as represented in this section of the OA.
- The OA provides that in the event "AMP is ordered to drop load, or AMP load is dropped automatically or manually by PG&E, AMP will receive a post-event written, preliminary report within five working days of the event, describing the system conditions that led to the load dropping and a tabulation showing the amounts of PG&E retail load also dropped."

On August 12, 2017, CB 142 was opened due to wire work on the SPS scheme. It was suggested that PG&E use CB 302. AMP attempted to obtain an answer and was given no response. Further attempts were directed by PG&E to their legal department, which provided the following response: "Alameda was already given the technical information on the day of the event. The

[1] Interconnection Agreement between Pacific Gas and Electric Company and Northern California Power Agency and City of Alameda, City of Biggs, City of Gridley, City of Healdsburg, City of Lodi, City of Lompoc, City of Palo Alto, City of Ukiah and Plumas-Sierra Rural Electric Cooperative Service Agreement No. 292 under PG&E FERC Electric Tariff Volume No. 5

Oakland CB 142 work was a planned outage. There was no system emergency or power flowing between Oakland C and Alameda at the time of this event. Therefore, there was no significant impact to Alameda. PG&E and Alameda were in communication and information was exchanged between both entities operations centers and protection engineers on the day of the event. Alameda has already been given the cause and relay information. The information already provided to NCPA & Alameda meet the interconnection agreement."

AMP was never given information on the day of the event. Moreover, the CB 142 planned outage should have been transferred the CB 302 which AMP paid for. AMP engineer Tito Nagrampa talked to PG&E engineer Ruhul Amin on August 14. He confirmed that this event was caused by PG&E during their routine relay testing. AMP chief operator Dave Steves also asked for additional information from PG&E Systems Operations regarding the details of this particular event and was never provided an answer.

Since PG&E has not been providing information to AMP, PG&E's lack of performance under the OA led AMP to believe the OA was superseded by the 2015 IA (see IA, Paragraph 40). Thus and based upon PG&E's claim that the OA is still in force, AMP is hereby providing written notice to PG&E of the need to significantly revise or replace the OA pursuant to section 31.1 of the 2015 IA and pursuant to the terms of the OA, which provides, "This agreement will be reviewed by PG&E and AMP at least annually in the last quarter, so any changes can be made for the upcoming year." (See OA, OA Review, p. 7.)

AMP is also not opposed to simply terminating the existing OA. AMP and NCPA believe the issues regarding switching between PG&E and its customer AMP's system could be addressed with operating procedures. AMP and NCPA believe the Alameda Loop Operating Orders dated December 13, 1988, could be updated to serve that purpose.

AMP and NCPA are prepared to negotiate appropriate replacement operating procedures and/or a new OA and request PG&E to provide by January 15 to AMP and NCPA the lead contact within PG&E to whom this issue is assigned.

Regards,

Sincerely,

DAVE DOCKHAM
Assistant General Manager, Power Management
Northern California Power Agency

Rebecca for Nico Procos

NICO PROCOS
General Manager
Alameda Municipal Power

Enclosures

Dave Dockham

Subject:	AMP/PG&E follow-up Oakland Reliability Proposal
Location:	2000 Grant St. Alameda + call-in
Start:	Wed 11/8/2017 3:00 PM
End:	Wed 11/8/2017 4:45 PM
Show Time As:	Tentative
Recurrence:	(none)
Meeting Status:	Not yet responded
Organizer:	Anguelov, Olya

Updated call-in 1-800-603-7556,,,32821511
Attaching the materials for discussion today. We are looking forward to a conversation regarding AMPs comments on the Oakland Reliability Proposal. The attached deck is meant to facilitate the discussion.
PG&E Attendees:
Olya Anguelov - Integrated Grid Planning
Matt Lecar – CAISO/FERC Relations
Paul Mather – Transmission Operations Engineering (call-in)
Marco Rios – Transmission Planning
We have also invited Jeff Billinton from CAISO to join the discussion – he will able to call-in 3-4 pm.
Thank you,
Olya
Alan,
Per our discussion, sending out the meeting invite to discuss AMP's concerns/comments on PG&E's Oakland Reliability Proposal.

Best,
Olya

OPERATING AGREEMENT (OA)

PACIFIC GAS AND ELECTRIC (PG&E) – ALAMEDA MUNICIAL POWER (AMP)

Effective – August 15, 2011

This Operating Agreement (OA) is established under the framework of the Interconnection Agreement between PG&E and the Northern California Power Agency (NCPA) and other parties including the City of Alameda, effective September 1, 2002. This OA completely replaces the PG&E – Alameda Municipal Power "Alameda Loop Operating Orders", dated 12/13/1988.

Background

PG&E provides 115 kV service to AMP from two Oakland locations – Station C and Station J. There are three 115 kV PG&E lines feeding Station C and two 115 kV lines feeding Station J. The PG&E 115 kV lines covered in this agreement have been designated as "critical facilities" by the California ISO (CAISO). As such, all clearances on these facilities will need to be processed through the CAISO according to their clearance management requirements.

AMP operates a 115 kV loop between Stations C and Station J, normally open at the midpoint, with Cartwright Substation fed from Station C and Jenney Substation fed from Station J. The AMP 115 kV loop consists of two sections of parallel underground 115 kV cables under the estuary and a seven (7) mile 556.5 ACSR wood/metal pole line that connects Stations C and J. See the attached diagrams for more detail on the PG&E and AMP 115 kV systems relevant to this agreement.

AMP is winter peaking with a peak load of about 75 MW, 60% at Jenney and 40% at Cartwright. With PG&E's concurrence, AMP can move load between the C and J sources, transferring Jenney or Cartwright via a 115 kV transfer involving 115 kV breakers 412 and 422 at Jenney or breakers 312 and 322 at Cartwright. In general, there is ample reserve capacity in the AMP transmission, substation and distribution systems to accommodate single transmission element (n -1) outages.

To maintain reliable power flows, PG&E may determine loading limits at either C or J under planned outage conditions or after an unplanned interruption on their 115 kV system.

The 2002 Interconnection Agreement, between PG&E and NCPA and other parties including Alameda, envisions operational cooperation and communication between PG&E and the parties, and minimization of impacts on each others' systems as follows:

1. Section 5.1, Interconnected Operations, Each party shall at all times, to the maximum extent practicable, avoid causing any adverse impact on the Other Party's System.
2. Section 9.1 Operating Provisions, General; The Parties agree to coordinate the operations of their respective Electric systems so as to minimize any adverse impacts to

the other Party's Electric system in accordance with Control Area arrangements, Good Utility Practice and Appendix E (Operational coordination).

3. Section 9.3, Coordination of Operations, PG&E and NCPA shall at all times coordinate and communicate their various outages and other switching operations which may have an effect on the operations of the other Party's Electric system....

4. Section 9.11.3, Scheduled Interruptions, All scheduled interruptions of service shall be made as mutually agreed by the parties and in accordance with Control Area arrangements and Good Utility Practice.

5. Appendix E, Operational Coordination, E.1, Maintenance Coordination; The Parties shall coordinate, in conformance with their obligations to the Control area Operator, on an annual basis, any maintenance outages of transmission facilities of their respective systems that may be reasonably expected to have an impact on the other party's system.

AMP Reliability Requirements during PG&E Planned Outages

AMP expects reliable service from the PG&E 115 kV sources, comparable to service levels in other PG&E major urban areas. While PG&E may need to temporarily remove 115 kV facilities from service from time to time for capital improvements, maintenance or repair work, AMP expects that reliable service will still be provided from PG&E's system. This will be accomplished by mutual outage planning to select times, weather conditions and system conditions that work for both PG&E and AMP.

PG&E, as part of its operational planning, makes a conservative assessment of the transmission system during the planned outage, including normal loading and voltage with the facility out of service for the planned outage, and emergency loading and voltage considering an additional element outage in addition to the facility out of service for the planned outage (n -1 -1). Either load is transferred to keep the system within limits or load is at risk. If Alameda load is at risk during a planned outage, AMP will be notified by PG&E during the outage planning process.

Further, AMP expects that it will be treated equitably with PG&E retail customers.

Following are AMP's reliability requirements for planning and scheduling planned outages on the PG&E 115 kV system affecting Station C or Station J:

1. AMP prefers to maintain two 115 kV sources to its load to prevent an island-wide blackout for a single PG&E or AMP contingency and requests PG&E cooperation to accomplish this.

2. AMP requests that PG&E schedule its work to take advantage of seasonal off-peak load conditions so that full or close to full load serving capability is maintained at Stations C and J.

3. If full load serving capability cannot be provided at Stations C or J during a planned outage (based on the facility out for maintenance and an additional facility outage), PG&E will give AMP a load limit at either C or J to operate to. AMP will decide within 1 business day of receipt of load information whether to make distribution transfers to meet the load limit, or transfer an entire substation via the 115 kV system. AMP will advise PG&E which load transfer action it will take.

4. If full load capability cannot be provided at Stations C or J during a planned outage, AMP requests that PG&E provide a restoration plan with timing and amount of load for initial restoration and timing for full load restoration of the AMP load. Further, if the planned outage is scheduled over more than one day, AMP requests that it can restore its system to normal over night. AMP will notify PG&E prior to switching and when the load has been transferred. AMP will switch again the next day of the clearance in accordance with the timing required by PG&E. PG&E will notify AMP during the outage planning process if overnight load transfers by AMP will not be allowed and explain why the request cannot be accommodated.

5. Either party may decline the other's planned outage request if significant storms are predicted. In addition, other conditions or limitations within their respective jurisdictions may also cause a planned outage requests to be declined. The declining party will notify the other entity and provide an explanation before the planned outage is scheduled to start.

6. The Alameda and Station C CTs can be dispatched in an emergency as called by the CAISO or the Transmission Operator, if needed to mitigate transmission line overloads or SPS limits. AMP strongly prefers the CTs be dispatched in lieu of dropping AMP customers during an emergency on PG&E's lines.

Outage Planning and Processing

Both parties will seek a cooperative approach to completing their individual and collective work and will seek to do so by mutual communication regarding planned outages that will include sharing the following information with each other:

a. Long Range Plan – PG&E prepares a 15 month outage plan to meet CAISO requirements. This plan is updated quarterly. NCPA receives the long range plan and quarterly updates via their PG&E account rep. AMP will receive the long range plan and quarterly update of PG&E's long range outage plan from NCPA.

b. Near Term Outage Plan – PG&E firms up its outage plans six weeks prior to a planned outage. This work is coordinated by PG&E's Lead System Operator (LSO) for the operating areas within PG&E. The parties will discuss by the 15th of each month the outage plans that affect each other through the next month

c. Detailed Outage Planning – When the work schedule and outage timing for a specific planned outage is firm, the PG&E LSO and AMP will work on the details of clearances (load limits, transfer requirements, restoration plans, etc.) that affect each other to include the following:

   i. Nature of the work to be preformed

   ii. Date and time the work will begin

   iii. Date and time the work will be completed

   iv. Apparatus to be cleared and the clearance limits required

   v. Name of the person in charge of the work

   vi. Whether or not protective grounds will be installed

   Note: Any clearance requested by PG&E that requires AMP equipment to be used as a clearance limit, shall require such equipment to be locked open and tagged by a qualified PG&E employee

d. Ad Hoc Operational contact – Both parties may inquire at any time about future outage plans that are being considered.

PG&E may encounter unusual circumstances or conditions on its system that can create loading or other problems. AMP will cooperate with PG&E, including manual load dropping if so ordered by PG&E. If AMP is ordered to drop load to preserve overall system reliability, AMP requests that PG&E make a good faith effort that the load dropping be equitably applied to PG&E retail customers as well. If AMP is ordered to drop load or AMP load is dropped automatically or manually by PG&E, AMP will receive a post-event, written, preliminary report within five working days of the event, describing the system conditions that led to the load dropping and a tabulation showing the amounts of PG&E retail load also dropped.

Operational Communications Requirements

AMP operates a 24x7 control center. AMP records (starting 3rd quarter, 2011) and logs all operational communications. All written, email and verbal operational communications between PG&E and AMP should be directed to the AMP control center. AMP has SCADA visibility and control on its 115 kV system and at the breaker level on its distribution system.

1. To meet the time schedule required by the California ISO (CAISO), both parties shall provide its planned outage requests at least 7 business days before the work and more notice if possible. Planned outages shall be requested via email and a phone call including the nature of the work necessitating the planned outage. AMP will meet the same notification requirements if work on its system requires load transfers between the C and J sources or switching on its 115 kV system.

2. PG&E will perform any coordination and communication needed with the CAISO including planned outages requested by AMP.

3. If AMP requests a load study from PG&E in conjunction with a planned outage on its system, AMP will provide the request to PG&E 14 business days prior to the planned outage

4. As noted in AMP's reliability requirements above, AMP requires that PG&E include a load limit in the planned outage request as well as a restoration plan for the planned outage.

5. On the day of the planned outage, the requesting party may contact the other to confirm that everything is on schedule. If the outage plans change during the course of an outage (e.g. outage duration is lengthened), verbal notification shall occur as soon as there is awareness of the change.

6. Should a planned outage be cancelled, the cancelling party shall notify the other via email and a phone call as they are aware of the cancellation.

7. In the event that PG&E provides AMP with operational switching orders or an emergency directive, AMP requires that professional 3-part operational communications, including repeat-back and confirmation, be used by both parties.

8. Real time conditions may change during a planned outage that neither party can foresee. Both parties will work together to adjust to conditions as they arise and mutually agree on a course of action, time permitting.

Unplanned outages may occur on either or both of the parties systems that may affect the reliability of Station C or J and indirectly the reliability of the AMP 115 kV system.

1. Both parties request that as a good faith effort, they be verbally notified of any unplanned outages that occur that affect the reliability or supply capacity at Station J, C or AMP. Such requests shall occur, as much as possible, within one hour of the unplanned outage. Both parties shall inform the other of the possible impacts from the outage or a successive outage(s), including load at risk, possible emergency load transfers and/or other operational actions. Further mutual notification shall occur when the facility affected by the unplanned outage is returned to service and the transmission system returned to normal operations.

2. Both parties utilize protective schemes that can potentially affect the other. Any changes, activation, load dropping or other similar events will be promptly communicated to the other party. One particular concern of AMP is that PG&E uses SPS's to protect the transmission lines supplying both Stations C and J. AMP requests that PG&E notify them of any changes to the SPS's such as any SPS activation or any other conditions affecting the SPSs.

AMP switching capabilities

With its SCADA system, AMP can accomplish station transfers on the 115 kV system or load dropping on the distribution system within 5 minutes of the order from PG&E. AMP can also make non-emergency transfers between Jenney and Cartwright via field switching on the distribution system.

1. AMP prefers selective load dropping to avoid triggering a total outage to either Jenney and/or Cartwright. AMP will use plans developed for rolling black conditions which drops load by distribution feeder (typically 3 –7 MWs per feeder). As noted in its reliability requirements, AMP requires that any load dropping be equitably applied to both AMP and to PG&E retail customers.

2. To support planned outages or other requests from PG&E, AMP can transfer load via its distribution system between Cartwright and Jenney. In general, AMP can move about 15 MWs (note, less load is available during off peaks hours)from one station to the other; this can be accomplished in about 2 hours from 0500 to 2300 and in about 3 hours from 2300 to 0500.

3. For routine AMP distribution switching between Cartwright and Jenney, AMP will first perform switching on its 115 kV system. To eliminate parallel flows through its distribution system, AMP will first transfer its entire load to a radial feed from either Sta. J or C at PG&E's determination. AMP will complete its distribution switching, and then return its 115 kV system to its normal configuration. PG&E will be notified prior to the switching on the 115 kV and when it is completed. AMP will also follow this process when it is time to return the distribution system to its normal configuration. AMP will comply with the advance timing required for planned outages to perform the switching described in this paragraph.

Special Switching Requirements

The AMP 115 kV system includes parallel underground transmission cables at both the station C and J ends of its system. These cables are armored, lead-covered, oil-filled, direct buried cables. In the event that the cables on the C end or J end of the AMP 115 kV system are de-energized, AMP will be responsible for testing and re-energizing the cables. .

PG&E will not apply its 30 minute wait practice for transmission cables owned by AMP, provided it is only applied for switching only, and not for fault conditions. Absolutely no test shall be conducted from a PG&E circuit breaker and associated relays after a fault or other relay operation. Alameda shall test any cable from their circuit breaker and associated relays after a fault on the line, whether or not it is internal to the cable, which is consistent with today's practice. A thorough patrol of overhead sections should precede any test.

For example, if the Station C end cables are de-energized, AMP will close into the cable from Jenney. With successful closing, AMP will notify PG&E that the cables tested OK. AMP will de-energize the cables and request that PG&E re-energize the cables from Station C. AMP will notify PG&E of any needed "wait time" prior to PG&E re-energizing the cables from C. With PG&E's concurrence after the cables are re-energized, AMP will proceed with switching on its 115 kV system to return the system to the normal

configuration. A similar process would be used if the Station J end cables are de-energized with AMP closing from Cartwright.

In the event that AMP is in a black out condition and upon request from AMP, PG&E can test AMP cables if due diligence is done to locate the potential fault condition. Upon agreement from PG&E & AMP, that the fault is not on the transmission cables or associated equipment PG&E can test the cables to restore AMP.

Contact Information

Alameda

Alameda Dispatch Desk = 510-748-3966
E-Mail = dispatch@alamedamp.com
Outage = 510-748-3900 dispatch@alamedamp.com

For matters pertaining to Long Range Outages:

- [Name]: **Systems Operations & Field Services Supervisor (Larry Rodriguez)**
- Phone Number: **510-748-3962**
- Mobile Number: **510-715-9857**
- Email Address: **RODRIGUEZ@alamedamp.com**

PG&E

Bay Metro Desk = 707-449-6710

Bay Metro LSO = EOETP&ETransOpsGCCBayAreaMetro@exchange.pge.com

Outage = getpotocoutage@exchange.pge.com

For matters pertaining to Long Range Outages:

- **[Name]: Central Area Outage Planner (Ted Rios)**
- Phone Number: **925-779-7383**
- Mobile Number: **415-314-1177**
- Email Address: **TXR3@PGE.COM**

OA Review

This agreement will be reviewed by PG&E and AMP at least annually in the last quarter, so any changes can be made for the upcoming year. Should operational problems occur, this agreement can be reviewed at any time at the request of either party and amended as needed by the joint concurrence of both parties.

Agreed to and approved,

X

Director of Transmission Operations, PG&E

X

Douglas Draeger
Assistant General Manager, E&O, AMP

Attachments

1 – PG&E Operating Diagram

2 – AMP Operating Diagram

3 - Moraga-Oakland J 115kV Overload Scheme

4 - Oakland C & D L Overload Schemes