

CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET
SACRAMENTO, CA 95814-5512



DATE: August 7, 2008

TO: Interested Parties

FROM: Ron Yasny, Compliance Project Manager

SUBJECT: Los Medanos Energy Center (98-AFC-1C) Revised Staff Analysis of Proposed Modifications to add a 4,950-foot-long Transmission Line

On March 17, 2008, the Los Medanos Energy Center, LLC filed a petition with the California Energy Commission requesting to modify the Los Medanos Energy Center (LMEC) Project. Staff prepared an analysis of this proposed change, and a copy is enclosed for your information and review.

The 555 megawatt project was certified by the Energy Commission on September 17, 1999, and began commercial operation on July 9, 2001. The facility, formerly known as Pittsburg District Energy Facility, is located in the City of Pittsburg, in eastern Contra Costa County.

The proposed modification would add a new 4,950-foot-long (0.93-mile-long) Double-circuit 115-kilovolt transmission line that would extend from LMEC to the Dow Pittsburg Facility (DOW), owned by Dow Chemical Company, located east of LMEC. This transmission line will be a dedicated line allowing Los Medanos Energy Center LLC's parent company (Calpine Corporation) and Dow Chemical Company, to decommission an older, less efficient power plant at the DOW facility. The DOW power plant would be removed and the chemical facility's electricity needs would be met by newer, cleaner, and more efficient power from the LMEC facility. Because of the close proximity of LMEC to DOW, there will be little transmission loss of electricity. The line will be built in partnership between LMEC and DOW. DOW will own the completed line.

Energy Commission staff reviewed the petition and assessed the impacts of this proposal on environmental quality, public health and safety, and proposes revisions to existing conditions of certification as follows:

- BIO-4** Changes the required Worker Environmental Awareness Program to allow a video presentation.
- BIO-7** Requires bird flight diverter installation and maintenance.
- CUL-6** Changes the cultural resource training program requirements to allow a video presentation.
- CUL-10** Allows the cultural resource specialist (CRS) to designate a monitor. It should be noted that staff will still require the CRS to file weekly summaries in a Monthly Compliance Report.
- VIS-10** Clarifies allowable pole height in an Industrial Zone as 95 feet.

August 8, 2008

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TSE-4 Ensures the new transmission line will be built and operated in conformance with all applicable laws, ordinances, regulations, and standards.

Monthly compliance reports are required during construction of the transmission line and a Delegate Chief Building Official will have oversight.

It is staff's opinion that, with the implementation of revised conditions, the project will remain in compliance with applicable laws, ordinances, regulations, and standards and that the proposed modifications will not result in a significant adverse direct or cumulative impact to the environment (Title 20, California Code of Regulations, Section 1769).

The amendment petition and staff's analysis has been posted on the Energy Commission's web page at <http://www.energy.ca.gov/sitingcases/pittsburg/compliance/index.html>. The Energy Commission's Order (if approved) will also be posted on the web page. Energy Commission staff intends to recommend approval of the petition at the September 10, 2008 Business Meeting of the Energy Commission. If you have comments on this proposed modification, please submit them to me at the address below prior to August 22, 2008

Ron Yasny, Compliance Project Manager
California Energy Commission
1516 9th Street, MS-2000
Sacramento, CA 95814

Comments may be submitted by fax to (916) 654-3882, or by e-mail to ryasny@energy.state.ca.us. If you have any questions, please contact me at (916) 651-1227.

Enclosures

LOS MEDANOS ENERGY CENTER (98-AFC-1C)
Request to Add a 115-kV Transmission Line
Biological Resources Staff Analysis
Prepared by: Marc Sasaki

INTRODUCTION

Los Medanos Energy Center's proposed new 115-kV transmission line as identified in the amendment petition will be 4,950 feet long. Of the total length, 3,400 feet will be strung on 85 to 90 foot tall steel poles. Though the transmission line route will pass through a mostly industrialized area with limited terrestrial habitat value, the transmission line could pose an electrocution or collision threat to avian species.

LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS) COMPLIANCE

Since the project was certified, there are no new or changed biological resource LORS that relate to the proposed changes in the Petition for Amendment.

ANALYSIS

PROJECT RELATED EFFECTS ON TERRESTRIAL BIOTA

The 115-kV transmission line Los Medanos Energy Center is proposing to construct will not likely have a notable effect on terrestrial biota. Biological surveys conducted on behalf of the project owner for the original project and follow-up work done for the new transmission line found no sensitive species or species of special concern along the route.

AVIAN ELECTROCUTION AND COLLISION POTENTIAL

As with the original project, potential impacts related to avian electrocution or collision is a concern for the new transmission line. Electrocution is not expected to be a problem because of the approximately six feet spacing between the conductors and the cross arms of the steel poles as described in the petition. This design will be consistent with guidelines developed by the Avian Power Line Interaction Committee (APLIC 2005).

Because the new transmission line parallels New York Slough as close as approximately 325 feet, and is about 1200 feet across the slough from Browns Island, bird collisions with these new lines becomes a potential issue. Browns Island is managed by the East Bay Regional Park District where access is strictly regulated. The island, 595 acres in size, is inhabited by many bird species either permanently or temporarily. Birds flying to or from the island and slough passing the transmission line during foggy or inclement weather could collide with wires resulting in death. Flocks of birds would be vulnerable to encountering the grounding lines in particular because of their relatively small diameter and lower visibility. Also, the ground wires are designed to be suspended above the conductors. As such, the conductors are expected to be more easily seen by birds in flight and avoided, consequently forcing birds up and into the ground wires. Existing condition of certification BIO-6 addressed concern for avian collision relative to transmission lines identified in the original project. The orientation of

the original 115-kV line generally away from the slough and Browns Island resulted in the establishment of a monitoring program to document bird collision potential. With the new transmission line location close to and paralleling New York Slough, Energy Commission staff recommends the project owner install bird flight diverters along the ground wires. Swan flight diverters available through Tyco Electronics would be a suitable design for use on the ground wires of the proposed transmission line. A new condition of certification (**BIO-7**) is proposed by CEC staff to address this potential project related impact.

WORKER ENVIRONMENTAL AWARENESS PROGRAM

The applicant has requested a change in **BIO-4** to allow the use of a video presentation for the Worker Environmental Awareness Program (WEAP).

The WEAP can be presented in a number of ways. New technology can be employed as an effective tool and this includes video presentation. As suggested by in the petition, this option should be made available to the project owner by modifying Condition of Certification **BIO-4**.

CONCLUSIONS AND RECOMMENDATIONS

If existing conditions of certification for biological resources are implemented, **BIO-4** modified as suggested in the petition, and **BIO-7** added as a new condition, staff concludes that there will be no significant biological resources impacts associated with the construction and operation of the new 115-kV transmission line.

PROPOSED MODIFICATIONS TO CONDITIONS OF CERTIFICATION

Modifications to the Biological Resources conditions of certification are shown below. (**Note:** Deleted text is in ~~strike through~~; new text is **bold and underlined**.)

BIO-4 The project owner shall develop and implement a Worker Environmental Awareness Program in which each of its own employees, as well as employees of contractors and subcontractors who work on the project site or related facilities (including any access roads, storage areas, transmission lines, water and gas lines) during construction and operation, are informed about biological resource sensitivities associated with the project.

Protocol: The Worker Environmental Awareness Program:

- a) shall be developed by the designated biologist and consist of an on-site or classroom presentation **or video presentation** in which supporting written material is made available to all participants;
- b) must discuss the locations and types of sensitive biological resources on the project site and adjacent areas;
- c) must present the reasons for protecting these resources;
- d) must present the meaning of various temporary and permanent habitat protection measures;

- e) must identify who to contact if there are further comments and questions about the material discussed in the program; and,
- f) shall inform workers of the potential biological resource impact risk associated with all construction and operational activities as is appropriate and emphasize protection of sensitive resources such as the brackish marsh along Route 10A as well as the wetland areas along Routes 1 and 5.

The specific program can be administered by a competent individual(s) acceptable to the designated biologist.

Each participant in the on-site Worker Environmental Awareness Program shall sign a statement declaring that the individual understands and shall abide by the guidelines set forth in the program material. Each statement shall also be signed by the person administering the Worker Environmental Awareness Program.

The signed statements for the construction phase shall be kept on file by the project owner and made available for examination by the CPM for a period of at least six (6) months after the start of commercial operation. Signed statements for active operational personnel shall be kept on file by the project owner for the duration of their employment and for six months after their termination.

Verification: At least 30 days prior to the start of surface disturbing activities at the project site and/or at ancillary facilities, the project owner shall provide copies of the Worker Environmental Awareness Program and all supporting written materials prepared by the designated biologist and the name and qualifications of the person(s) administering the program to the CPM for approval. The project owner shall state in the Monthly Compliance Report the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date.

BIO-7 Bird flight diverters will be placed on all overhead ground wires associated with the new 115-kV transmission line to Dow Pittsburg. During construction of the 115-kV transmission line, bird flight diverters will be installed to manufacturer's specification. Energy Commission staff will provide final approval of the bird flight diverter to be installed. Staff recommends that the Swan Flight Diverter be given careful consideration when making a decision about which diverter is to be installed.

Verification: No less than 7 days prior to energizing the new 115-kV transmission line, the project owner will provide photographic verification to the Energy Commission CPM that bird flight diverters have been installed to manufacturer's specifications. A discussion of how the bird flight diverters will be maintained during the life of the project will be included in the project's BRMIMP.

REFERENCES

APLIC 2005. Avian Protection Plan (APP) Guidelines. The Edison Electric Institute's Avian Power Line Interaction committee (APLIC) and U.S. Fish and Wildlife Service (USFWS). April 2005. 87 pp.

LOS MEDANOS ENERGY CENTER (98-AFC-1C)

Request to Add a 115-kV Transmission Line Cultural Resources Staff Analysis

Prepared by: Beverly E. Bastian and Dorothy Torres

INTRODUCTION

Los Medanos Energy Center, LLC, (LMEC) petitioned the Energy Commission on March 17, 2008, seeking approval to modify the project by adding a new, dedicated, double-circuit, 115-kV transmission line between LMEC and Dow Chemical's Pittsburg facility, to provide electricity to that facility (Los Medanos 2008a).

The current LMEC facility is located in the community of Pittsburg, in Contra Costa County. The 555-megawatt facility was certified by the Energy Commission on August 17, 1999, and construction began in September, 1999. The facility has been in operation since July, 2001.

Potential impacts to cultural resources from the proposed amendment include:

- Construction of the proposed underground portion of the proposed transmission line could impact unknown buried archaeological resources.
- The overhead portion of the proposed transmission line could impact the integrity of setting and feeling of any historically significant standing structures in the vicinity by introducing a new, tall, linear, visual element.

LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS) COMPLIANCE

At the time of certification, LORS applicable to cultural resources were identified in staff's Final Staff Assessment. Those LORS will continue to apply to the amended project, and no new LORS or changes to LORS pertinent to this project have been identified.

ANALYSIS

The proposed new 115-kV transmission line would be located on two separate parcels belonging to USS-POSCO Incorporated and to Dow Pittsburg. The underground portion of the transmission line would extend 1,550 feet from the existing LMEC switchyard, using 900 feet of existing duct bank and 650 feet of new trench. The overhead portion of the transmission line would extend an additional 3,400 feet to the Dow Chemical switchyard site (Los Medanos 2008a, pp. 2-1–2-2).

The underground transmission line route would include a duct bank located approximately 20 feet from the previously fenced boundary of recorded historic site CA-CCO-715H. The fence that previously bordered the historic site has been replaced by an elevated steam line. Historic maps indicate that the route of the steam line was previously the location of railroad tracks, but no trace of the tracks remains (CH2MHill 2008).

Site CA-CCO-715H consists of portions of concrete foundations of two previous industrial facilities: the Columbia Steel Company, a rolling mill constructed in 1923; and an abandoned PG&E substation of the same date, constructed to supply power to the steel mill. The mill was established in the same location as an earlier industrial facility, the Pacific Stone Company, a calcining plant that operated prior to 1911. (Calcination is a thermal treatment process applied to ores and minerals to facilitate processing.) Site CA-CCO-715H has been recommended not eligible for the California Register of Historical Resources by Sean Dexter, archaeologist with Woodward – Clyde who conducted a reconnaissance survey on April 27, 1998 (CHRIS 2007). The proposed project would have no impact on site CA-CCO-715H.

In general, although the area has been in industrial use for a long time, grading and excavation for the proposed transmission line may disturb native soils and so could impact unknown buried archaeological resources.

LMEC's cultural resources consultant states that many standing structures in the vicinity of the proposed overhead portion of the transmission line are 50 years of age, or older, but indicates that none would be altered or demolished to accommodate the construction of the transmission line. Since most of the structures surrounding the proposed transmission line are industrial and utilitarian, as is the setting, the opinion of LMEC's cultural resources consultant is that adding the proposed transmission line to that setting does not represent a significant impact to the integrity of setting and feeling (Los Medanos 2008a, p. 3-26). Staff agrees.

CONCLUSIONS AND RECOMMENDATIONS

Staff has reviewed the petition for potential effects on cultural resources and consistency with applicable LORS. Based on this review, staff determined that the proposed amendment would have no impact on previously identified cultural resources and would comply with all applicable LORS. Staff agrees with the proposed petition, and LMEC may proceed with the activities proposed in the amendment.

A potential exists, however, for ground disturbance to impact previously unknown archaeological resources. All cultural resources conditions of certification placed on the LMEC project are applicable to this amendment and would mitigate any significant impacts to newly discovered significant cultural resources.

PROPOSED MODIFICATIONS TO CONDITIONS OF CERTIFICATION

As part of this amendment, LMEC has proposed the following modification to existing LMEC cultural resources Condition of Certification **CUL-6** (Los Medanos 2008a, p. 3-27). (**Note:** Deleted text is in ~~strikethrough~~; new text is **bold and underlined**.)

CUL-6 Prior to the start of construction and throughout the project construction period as needed for all new employees, the project owner and the designated cultural resource specialist shall provide the CPM-approved training to all project managers, construction supervisors, and workers. **This training may be provided in the form of a video presentation.** The project owner and

construction manager shall provide the workers with the CPM-approved set of procedures for reporting any sensitive resources that may be discovered during project-related ground disturbance.

Verification: Prior to the start of construction and throughout the project construction period as needed for all new employees, the project owner and the designated cultural resources specialist shall present the CPM-approved training program on the potential for project impacts to sensitive cultural resources encountered during project activities. The project owner shall provide documentation to the CPM that the employee training and the set of procedures have been provided to all project managers, construction supervisors, and all workers.

Staff agrees to LMEC's proposed modification of **CUL-6**.

Also, as part of this amendment, LMEC has proposed two modifications to existing LMEC cultural resources Condition of Certification **CUL-10** and one modification to the **Verification of CUL-10** (Los Medanos 2008a, p. 3-27):

CUL-10 The designated cultural resource specialist, or a qualified cultural resources monitor designated by the cultural resource specialist, shall be present at all times to monitor construction-related grading, excavation, trenching, and/or augering in the vicinity of previously recorded archaeological sites and in areas where cultural resources have been identified during project construction.

If the designated cultural resource specialist determines that full-time monitoring is not necessary in certain portions of the project area or along portions of the linear facility routes, the designated specialist shall notify the project owner of the changes. The designated cultural resource specialist shall use mile post markers and boundary stakes placed by the project owner to identify areas where monitoring is being reduced or is no longer deemed necessary.

The daily logs prepared by the designated cultural resource specialist or cultural resources monitor shall indicate by tenths of a post mile, where and when monitoring has taken place and where monitoring has been deemed unnecessary.

Verification: The project owner shall include in the Monthly Compliance Reports to the CPM, copies of the weekly summary reports prepared by the designated cultural resource specialist or cultural resources monitor on project-related cultural resource activities.

Staff agrees with the two proposed modifications to **CUL-10**. The following language, 'or a qualified cultural resources monitor designated by the cultural resource specialist,' may be added to the first paragraph of **CUL-10**, as LMEC requests. Additionally, the following language, 'or cultural resources monitor' may be added to the third paragraph of **CUL-10**, as LMEC requests.

Staff does not agree to LMEC's modification to the **Verification of CUL-10**, allowing the cultural resources monitor to prepare weekly summaries for the Monthly Compliance

Reports rather than the Cultural Resources Specialist (CRS). The CRS is the person responsible for the supervision of all cultural resources activities on the project and for reporting on those activities to the Compliance Project Manager. Therefore, the proposed change to the **Verification** of **CUL-10** is not acceptable.

REFERENCES

Los Medanos 2008a – Petition for Amendment: Los Medanos Energy Center to Dow Pittsburg 115-kV Transmission Line, Pittsburg, California. Dated, March 17, 2008. Received, March 17, 2008.

CHRIS 2007 – California Historical Resources Information System, Northwest Information Center, Archaeological Site Record (DPR 523A) for Site CA-CCO-715H, recorded 4/27/1998; updated 8/14/2000.

CH2MHill 2008 – Confidential Response to Data Requests 1 through 3, D. Davy for the Los Medanos Energy Center to Dow Pittsburg 115-kV Transmission Line Amendment (98-AFC-1C). Received, June 2, 2008.

LOS MEDANOS ENERGY CENTER (98-AFC-1C)

Request to Add a 115-kV Transmission Line

Visual Resources Staff Analysis

Prepared by: Mark R. Hamblin

INTRODUCTION

The project owner filed a Petition To Amend the Final Commission Decision for the Pittsburg District Energy Facility (petition). The Pittsburg District Energy Facility was later renamed Los Medanos Energy Center (LMEC). The petition involves a request to amend Condition of Certification **VIS-10** for the licensed project to allow the installation of 85-foot and 90-foot tall transmission line poles for an overhead 115-kV transmission line. Condition of Certification **VIS-10** states “All transmission poles shall be a maximum of 75 feet in height.”

The project owner’s proposed project includes the installation of eight new carbon steel tubular designed transmission line poles 85 feet and 90 feet in height along an approximate 3,400-foot portion of the project’s 4,950 foot-long transmission line route. The overhead transmission line would extend from Columbia Avenue to the project’s proposed switchyard site on the Dow Chemical Pittsburg facility. The use of 85 and 90-foot tall poles would conflict with **VIS-10** of the license issued August 1999.

The project owner has proposed a revision to Condition of Certification **VIS-10** in their petition to allow for taller transmission line poles outside of residential designated areas. Staff has proposed a different revision to Condition of Certification **VIS-10** as a part of this petition.

LAWS, ORDINANCES, REGULATIONS AND STANDARDS COMPLIANCE

VISUAL RESOURCES Table 1 provides a general description of identified adopted state, and local laws, ordinances, regulations, standards (LORS) pertaining to aesthetics or preservation and protection of sensitive visual resources relevant to the proposed project.

The proposed amendment to the licensed project does not involve federal managed lands, or applicable federal or state aesthetic or visual resources related LORS. The proposed project would be consistent with the visual resources related LORS identified in Table 1. Staff did not find any new state or local LORS applicable to the proposed project that were not reviewed for the issuance of the license by the Energy Commission in 1999.

**VISUAL RESOURCES Table 1
Laws, Ordinances, Regulations, and Standards Laws**

Applicable LORS	Description
Local	
<p>Pittsburg Municipal Code Title 18 Zoning</p> <p>Division III. Base District Regulations Chapter 18.54 - Industrial Districts (I)</p> <p>- Article II. Development Standards</p> <p>--Section 18.54.100 IP, IL and IG Districts—Review of Plans.</p> <p>--Section 18.54.115 IP, IL and IG Districts</p> <p>--Section 18.54.120 Additional Height Allowance.</p> <p>Division V. General Land Use Regulations, Chapter 18.80 – Development Standards For All Uses</p> <p>-Section 18.80.020 Height Limit Exceptions</p>	<p>General Industrial District (IG) provides sites for intense industrial uses on large parcels occupied by or directly adjacent to existing heavy industrial uses, as well as on small parcels in the vicinity of heavy industrial uses. Areas are established for heavy industrial uses, in order to protect them, to the extent feasible, from disruption and competition for space from unrelated retail and commercial uses that are more appropriately located elsewhere in the city.</p> <p>All projects require design review.</p> <p>Property development regulations.</p> <p>- Maximum height of structures: 50 feet</p> <p>An increase over the maximum height allowance is allowed in the IL and IG districts equal to the number of additional feet the structure is set back from each property line beyond the minimum yard requirements, up to a maximum height of seventy-five feet (75'). To be entitled to additional height, the building or structure setback must exceed the minimum on all sides.</p> <p>A transmission tower may exceed the maximum permitted height in a district in which the site is located subject to the zone district’s regulations. In “Industrial” districts a structure may exceed the zone district height limit by 20 feet.</p>

ANALYSIS

Condition of Certification **VIS-10**, in the Pittsburg District Energy Facility Commission Decision, states “All transmission poles shall be a maximum of 75 feet in height” (CEC1999).

According to the 1999 Commission Decision for the project, nine key observation points (KOPs) were selected for evaluating the original project’s potential visual impacts. Staff and the project owner at the time agreed that the visual impacts at the following KOPs would be *de minimus* or nonexistent: KOP 1 (Marina at New York Landing); KOP 3 (East 8th Street near Cumberland Street); KOP 6 (Railroad Avenue near City Park); and KOP 8 (Softball field in Marina Park looking west). KOP 2 (Southwest corner of East 8th and Harbor Streets) represents the view from the residential area closest to the site and the eastern portion of the transmission line. Project facilities involving the transition station and the nearest transmission pole were expected to be in full view, dominating the viewshed. The Pittsburg General Plan Update at the time recommended buffers such as landscaping, especially at the eastern end of downtown where residential uses came into contact with heavy industrial uses. Staff determined views of the transition station and the nearest transmission pole would conflict with the city’s General Plan buffer policy and result in a significant visual impact at KOP 2. To mitigate the visual impacts, the project owner reduced the height of the transmission poles from the initial proposal of 150 feet to 75 feet, which was more consistent with other transmission poles in the area. The project owner proposed to plant trees and other landscaping along the east side of Harbor Street to screen the transition station from sensitive public views. At maturity, the trees would screen the lower half of the nearest transmission pole and most of the view of the power plant, two poles of the transmission line to the USS-POSCO Incorporated steel mill and the mill itself. The project owner also proposed a 12-foot sound wall along East Santa Fe Avenue. The sound wall would block views of most of the transmission poles and almost all views of the LMEC, as well as views of existing industrial facilities (CEC1999). The trees and other landscaping have been planted and are maturing. The sound wall has been constructed.

In general, the industrial character of the area is underscored by the presence of the approximate 300-acre USS-POSCO Incorporated (UPI) steel mill, which produces cold-rolled sheets, galvanized sheets, tin plate and tin-free steel. Three large Koch Carbon petroleum coke fuel storage domes with attached loading conveyors and marine terminal, and the 12-acre LMEC are along East 3rd Street. Further east is the 500-acre Dow Chemical Pittsburg facility. Small mixed industrial uses along Industry Road including storage yards and equipment repair facilities. South of the LMEC is an undeveloped area on the UPI steel mill property, a rail yard that serves the steel mill, and a rail spur which extends to the western property boundary of the LMEC. A residential area is south of the rail yard. An existing 12-foot tall masonry sound wall limits the noise and view of the rail yard and LMEC from the residential area. The masonry wall would also help limit the view of the proposed transmission line (**Visual Resources Figure 1 – Aerial View Showing Proposed Overhead Transmission Line Route and Switchyard**).

Wooden transmission poles line both sides of East 3rd Street and Riverview Drive. Steel lattice towers extend east from the PG&E substation at the east end of East 3rd Street. The proposed project’s overhead transmission line across the UPI property would be within an

existing transmission line corridor (**Visual Resources Figure 2** – View East Along East 3rd Street From Nearest Residence).

The LMEC to Dow Pittsburg transmission line would be located entirely on property belonging to UPI and Dow Chemical. The first 900 feet of the transmission line project, extending from the LMEC switchyard, would consist of installing a conductor in the LMEC's existing underground duct bank. The next 650 feet of the transmission line, extending east of the LMEC would be underground (LMEC2008). The remaining 3,400 feet of transmission line would involve the installation of eight support towers 85 and 90 feet in height. The support towers would cross the UPI rolled steel storage yard and the Dow Pittsburg surplus equipment storage yard. A new switchyard and control center are to be constructed at the Dow Chemical facility (**Visual Resources Figure 3** – View of Dow Pittsburg Switchyard and Laydown Area Looking Northwest).

North of the proposed transmission route is New York Slough. Sensitive viewers at this location would be recreational boaters. Despite the slough's 20-foot tall high bank, and the project's 250-foot setback from the bank, boaters are further out in the slough would see some portion of the transmission towers. They would visually blend within the industrial character of the area from the view location.

The Pittsburg Municipal Code, section 18.54.115 stipulates a maximum height of 50 feet for structures in the industrial zone district. Section 18.54.120 of the code provides for an additional height allowance over the 50-foot height limit up to a maximum of 75 feet for structures in the industrial district. Section 18.80.020 provides a height limit exception for transmission towers to exceed the maximum height limit of the industrial zone district by twenty feet. Staff concludes that project owner's transmission poles in the city's industrial zone could reach a maximum height of 95 feet. The project owner is proposing eight new 85 to 90-foot tall transmission towers.

CONCLUSIONS AND RECOMMENDATIONS

The visual analysis focused on two main issues; (1) would construction and operation of the project cause an aesthetic impact under CEQA; and (2) would the project comply with applicable local LORS pertaining to aesthetics or preservation and protection of sensitive visual resources.

1. The project is to be constructed on properties within the "Industrial General" zone district within the city of Pittsburg. Properties surrounding the transmission line route are also zoned for industrial uses.
2. The project site does not have frontage on, or traverse a segment of a road recognized as a National Scenic Byway or All American Road, or a State Scenic Highway.
3. The project would not have a substantial adverse effect on an identified scenic vista or a scenic resource using the licensed project's selected nine key observation points.
4. The project would not substantially degrade the existing visual character or quality of the site and its surroundings.

5. The project would generate a less than significant new source of light or glare to nighttime or daytime views.
6. The project's publicly visible structures would not be seen by an identified minority population of greater than 50 percent and would not result in any significant adverse visual impact.
7. The city of Pittsburg's municipal code sections 18.54.120 and 18.80.020 provide an allowance for transmission towers in the industrial zone to have a maximum height of 95 feet.

The construction and operation of the Los Medanos Energy Center to Dow Pittsburg 115-kV transmission line as proposed, with the effective implementation of the licensed project's condition of certification and the staff's recommended (amended) Condition of Certification **VIS-10** (below), would ensure that visual resource impacts generated by the project are less than significant, and ensure that the project complies with all applicable LORS pertaining to aesthetics or preservation and protection of sensitive visual resources.

PROPOSED AMENDED CONDITION OF CERTIFICATION

Staff recommends the following change to the licensed project's Condition of Certification **VIS-10**. (**Note:** Deleted text is in ~~strikethrough~~; new text is **bold and underlined**.)

VIS-10 All **The Los Medanos Energy Center to Dow Pittsburg 115-kV transmission line poles in the city of Pittsburg's "Industrial (I)" zone district** shall ~~be~~ **have** a maximum of ~~75~~ **95** feet in height.

Protocol: The project owner shall submit to the CEC CPM for review and approval final plans for the transmission poles, specifying their height. If the CPM notifies the project owner that revisions of the plan are needed before the CPM will approve the plan, the project owner shall prepare and submit to the CPM a revised plan.

The transmission poles shall not be installed before the plan is approved. The project owner shall notify the CPM when the poles have been installed and are ready for inspection.

Verification: At least 60 days prior to the start of project construction, the project owner shall submit the plans to the CPM for review and approval.

If the CPM notifies the project owner that any revisions to the plans are needed before the CPM will approve the plans, within 30 days of receiving that notification the project owner shall prepare and submit to the CPM revised plans.

The project owner shall notify the CPM within 7 days after completing installation of the poles that the poles are ready for inspection.

REFERENCES

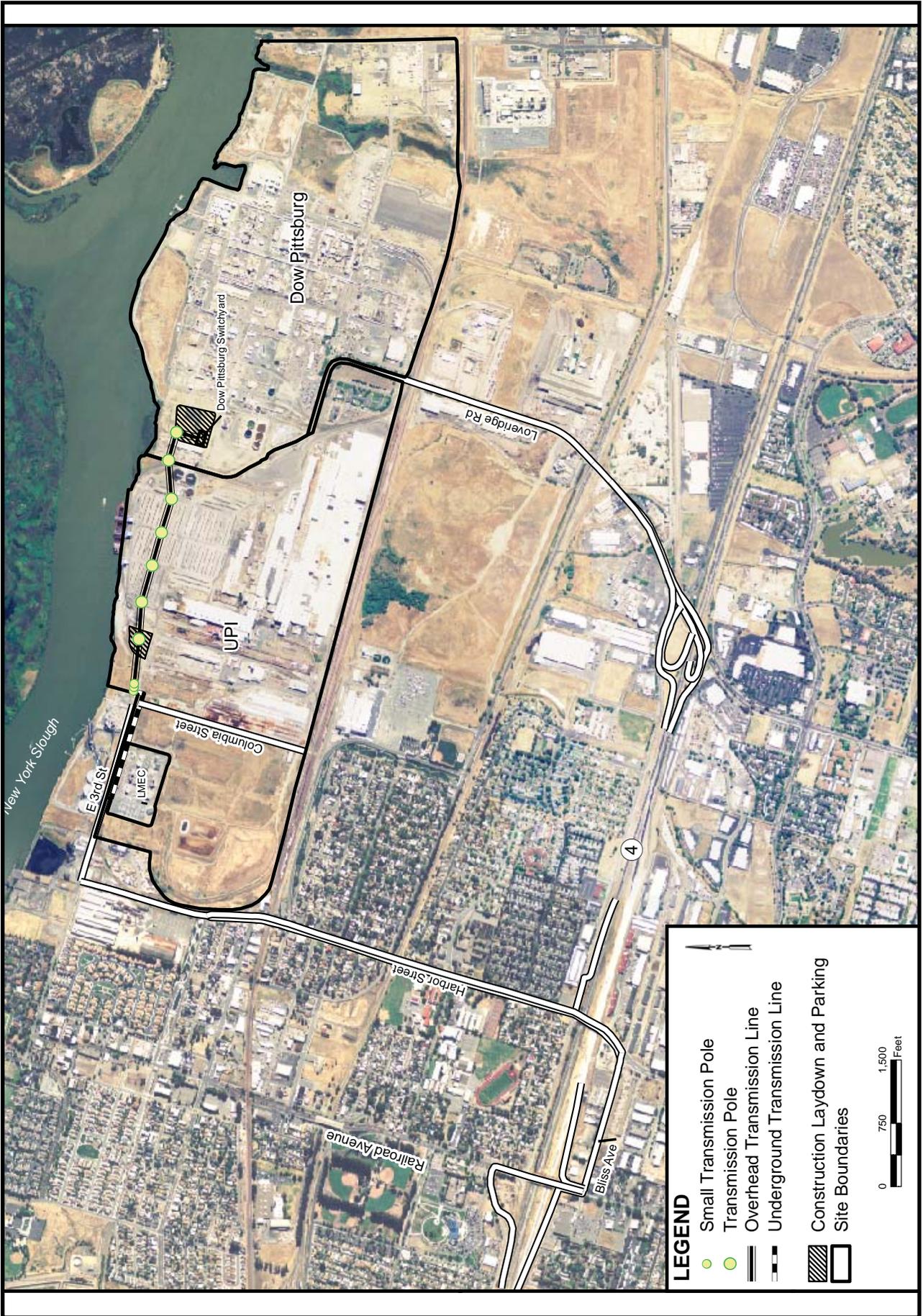
CEC1999 – California Energy Commission, Commission Decision Application For Certification Pittsburg District Energy Facility, August 1999.

COP2008 -City of Pittsburg website <http://www.ci.pittsburg.ca.us/pittsburg> accessed 2008.

COP2008a - City of Pittsburg Municipal Code, Title 18, April 2008.

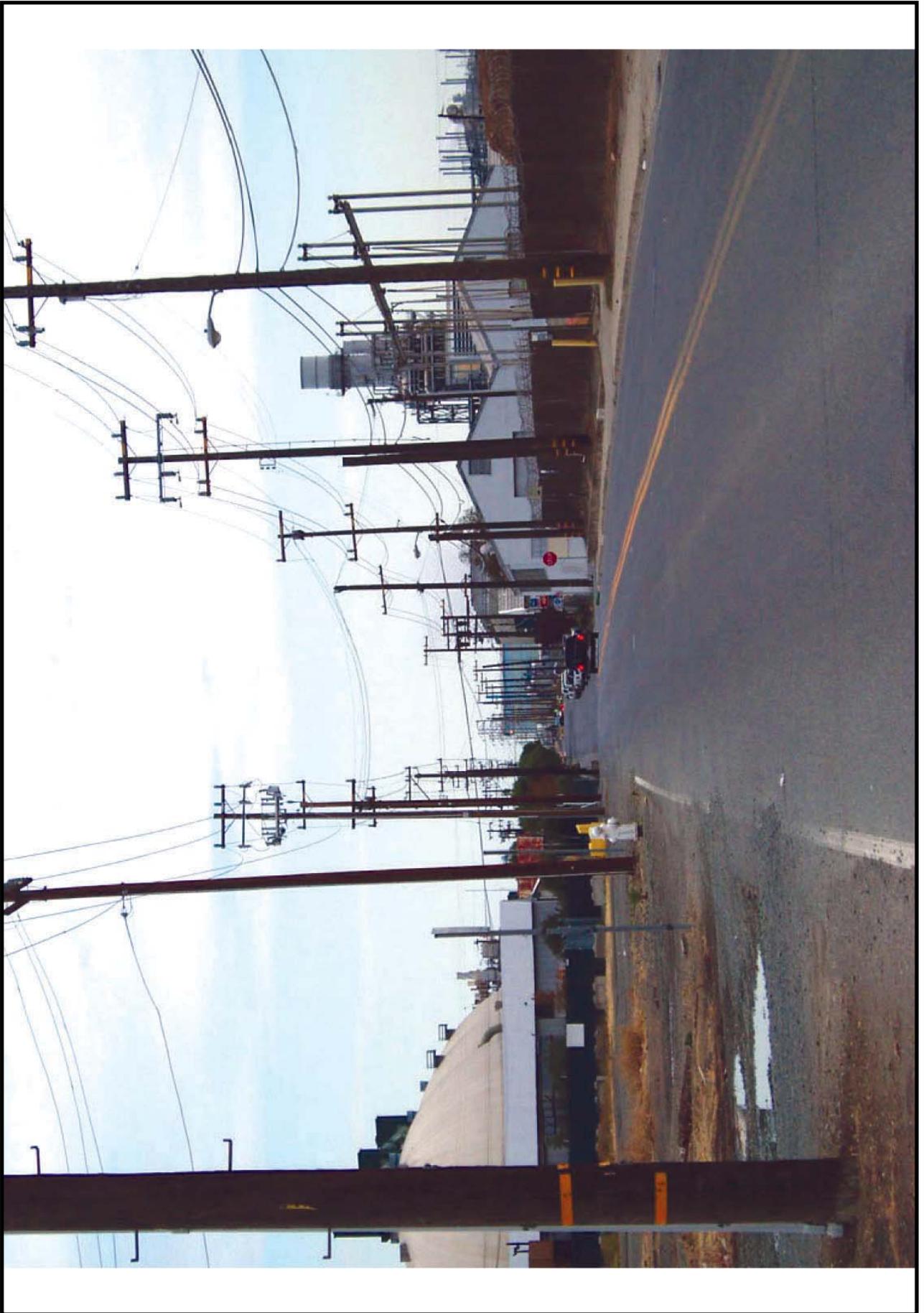
LMEC2008 - Los Medanos Energy Center, LLC, Petition To Amend Final Commission Decision for the Pittsburg District Energy Facility, March 2008.

VISUAL RESOURCES - FIGURE 1
 Los Medanos to Dow Pittsburg Transmission Line - Aerial View Showing Proposed Overhead Transmission Line Route and Switchyard



VISUAL RESOURCES - FIGURE 2

Los Medanos to Dow Pittsburg Transmission Line - View East Along East 3rd Street From Nearest Residence



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VISUAL RESOURCES

VISUAL RESOURCES - FIGURE 3

Los Medanos to Dow Pittsburg Transmission Line - View of Dow Pittsburg Switchyard and Laydown Area Looking Northwest



JUNE 2008

VISUAL RESOURCES

LOS MEDANOS ENERGY CENTER (98-AFC-1C)

Request to Add 115kV Transmission Line Transmission System Engineering Staff Analysis

Prepared by: Sudath Arachchige and Mark Hesters

INTRODUCTION

Los Medanos Energy Center (LMEC) has proposed amendment for the construction of a 4,950 foot long (0.93 mile long) double circuit 115kV transmission line from Los LMEC to the Dow Chemical facility in Contra Costa County, California. The electrical power from LMEC will replace power that is currently being generated for Dow at the existing 70 MW Calpine Pittsburg Power plant, which is owned and operated by Calpine. The Calpine Pittsburg Power Plant will be shut down and decommissioned after the construction of new transmission facilities. The proposed transmission facilities will consist with four distinct segments:

- installation of approximately 900 feet of conductor in an existing underground duct bank from the LMEC switchyard to a point just east of LMEC,
- installation of new underground duct bank for 650 feet east from the LMEC site boundary,
- construction of a 3400 foot overhead segment from Columbia Avenue to the Dow Pittsburg switchyard, and
- construction of a switchyard at the Dow Pittsburg facility.

The detailed description of the design facilities have been discussed in the amendment section 2.1.1 to 2.1.2.4 and Figure 2.1-1a to 2.1-3, pages 2-1 to 2-16.

LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS) COMPLIANCE

- California Public Utilities Commission (CPUC) General Order 95 (GO-95), *Rules for Overhead Electric Line Construction*, specifies uniform requirements for the construction of overhead electric lines. Compliance with this order ensures both reliable service and a safe working environment for those working in the construction, maintenance, operation, or use of overhead electric lines, and for the safety of the general public.
- CPUC General Order 128 (GO-128), *Rules for Underground Electric Line Construction*, establishes uniform requirements for the construction of underground electric lines. Compliance with this order also ensures both reliable service and a safe working environment for those working in the construction, maintenance, operation, or use of underground electric lines, and for the safety of the general public.
- National Electric Safety Code 1999 provides electrical, mechanical, civil, and structural requirements for overhead electric line construction and operation.

- California Independent System Operator (California ISO) planning standards also provide the standards and guidelines that assure adequacy, security and reliability during the planning process of the California ISO's electric transmission facilities. The California ISO planning standards incorporate both the NERC and WECC planning standards. With regard to power flow and stability simulations, the California ISO's planning standards are similar to those of the NERC and WECC, and to the NERC's planning standards for transmission system contingency performance. However, the California ISO's standards provide additional requirements that are not found in the NERC, WECC, or NERC planning standards. The California ISO standards apply to all participating transmission owners that interconnect to both the California ISO-controlled transmission grid, and to neighboring grids not operated by the California ISO (California ISO 2002a).

ANALYSIS

Staff has reviewed the proposed amendment for potential environmental effects that would be triggered due to transmission line construction, potential impacts to the California ISO grid, the Pacific Gas and Electric Company (PG&E) transmission system and consistency with applicable LORS. The interconnection of the LMEC to the Dow Chemical facility was analyzed in the California Energy Commission decision and Condition of Certification (COC) **TSE-1** is still applicable, however staff is recommending the adoption of a new condition of certification, **TSE-4**, to insure the new facilities comply with current Energy Commission LORS requirements. Based on this review and assuming the adoption of COC **TSE-4**, staff determined that the applicant has adequately addressed the rules for design and construction methods for Overhead and Underground Electric Line Construction detailed in the National Electrical Code, CPUC G.O.95 and G.O.128.

Additionally, staff has requested that the California ISO and PG&E review the amendment to determine the impacts to the California ISO grid. The California ISO review is contained in Attachment 1 to this document and indicates that the California ISO will require the installation of metering equipment for the proposed transmission modifications. The PG&E review is contained in Attachment 2 to this document and indicates that the new transmission facilities will not have an adverse impact on the PG&E transmission system.

Staff is recommending the additional condition of certification **TSE-4** to insure compliance of the new facilities with updated LORS.

CONCLUSIONS AND RECOMMENDATIONS

- Based on the California ISO's preliminary review and discussions with PG&E, the existing interconnection tap to the Dow chemical plant from the Pittsburg-Kirker-Columbia Steel 115kV #1 and #2 electric transmission lines do not form any part of the California ISO grid, therefore, the California ISO has not identified any grid related issues that could impact the installation of the new transmission line.

- The California ISO Tariff provisions applicable to this proposal require Calpine Corporation to install California ISO certified revenue quality meters to provide the California ISO with meter data distinguishing the generation from LMEC from the load of the Dow Chemical plant and require Calpine Corporation to provide generation data telemetry as specified by the California ISO's telemetry engineers. These meters would be constructed within the fence line of existing facilities.
- Conformance with COC **TSE-4** would ensure that the design, construction, and operation of the proposed transmission facilities would conform to all applicable Laws, Ordinances, Regulations, and Standards.

PROPOSED MODIFICATIONS TO CONDITIONS OF CERTIFICATION

TSE-4 The project owner shall ensure that the design, construction, and operation of the amended transmission facilities, the Los Medanos Energy Center to Dow Pittsburg 115 kV transmission line, will conform to all applicable LORS, and the requirements listed below. The project owner shall submit the required number of copies of the design drawings and calculations, as determined by the CBO.

- A. The Los Medanos Energy Center to Dow Pittsburg 115 kV transmission line and interconnection facilities shall meet or exceed the electrical, mechanical, civil, and structural requirements of CPUC General Order 95, CPUC General Order 128 or National Electric Safety Code (NESC); Title 8 of the California Code and Regulations (Title 8); Articles 35, 36 and 37 of the *High Voltage Electric Safety Orders*; National Electric Code (NEC) and related industry standards.
- B. Outlet line crossings and line parallels with transmission and distribution facilities shall be coordinated with the transmission line owner and comply with the owner's standards.
- C. A request for minor changes to the facilities described in this condition may be allowed if the project owner informs the CBO and CPM and receives approval for the proposed change. A detailed description of the proposed change and complete engineering, environmental, and economic rationale for the change shall accompany the request. Construction involving changed equipment or substation configurations shall not begin without prior written approval of the changes by the CBO and the CPM.

Verification: At least 60 days before the start of construction of transmission facilities (or fewer days if mutually agreed upon by the project owner and CBO), the project owner shall submit to the CBO for approval:

- A. Design drawings, specifications, and calculations conforming with CPUC General Order 95, CPUC General Order 128 or National Electric Safety Code (NESC); Title 8 of the California Code and Regulations (Title 8); Articles 35, 36 and 37 of the *High*

Voltage Electric Safety Orders; National Electric Code (NEC) and related industry standards, for the poles/towers, foundations, anchor bolts, conductors, grounding systems, and major switchyard equipment;

- B. For the transmission facilities identified above, the submittal package to the CBO shall contain the design criteria, a discussion of the calculation method(s), a sample calculation based on “worst case conditions”¹ and a statement signed and sealed by the registered engineer in responsible charge, or other acceptable alternative verification, that the transmission element(s) will conform with CPUC General Order 95, CPUC General Order 128 or National Electric Safety Code (NESC); Title 8 of the California Code and Regulations (Title 8); Articles 35, 36 and 37 of the *High Voltage Electric Safety Orders*; National Electric Code (NEC), and related industry standards;
- C. Electrical one-line diagrams signed and sealed by the registered professional electrical engineer in charge, a route map, and an engineering description of the equipment and configurations covered by requirements **TSE-4 A** above.

REFERENCES

LMEC2008 - Los Medanos Energy Center, LLC, Petition to Amend Final Commission Decision for the Pittsburg District Energy Facility, March 2008.

¹ Worst-case conditions for the foundations would include for instance, a dead-end or angle pole.

ATTACHMENT 1

The CAISO has reviewed the request from Calpine Corporation to build a dual 115 kV electric transmission line to serve the Dow Chemical plant directly from its Los Medanos Energy Center ("LMEC"). Based on the CAISO's preliminary review and discussions with Calpine Corporation, the existing interconnection tap to the Dow Chemical plant from the Pittsburg-Kirker-Columbia Steel 115kV #1 and #2 electric transmission lines does not form any part of the CAISO Controlled Grid, and as such, the CAISO has not identified any grid related issue that could impact the installation of the new electric transmission line.

CAISO has been given to understand that the three existing generators located at the Dow Chemical plant, which currently serve the energy requirements of the Dow Chemical plant, will be disconnected and retired prior to activating the interconnection of the proposed LMEC to Dow Chemical plant 115 kV electric transmission line.

CAISO Tariff provisions applicable to this proposal require Calpine Corporation to install CAISO certified revenue quality meter(s) to provide the CAISO with meter data distinguishing the generation from LMEC from the load of the Dow Chemical plant and require Calpine Corporation to provide generation data telemetry as specified by the CAISO's telemetry engineers for the CAISO's use in maintaining CAISO grid reliability.

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ATTACHMENT 2

PG&E's has reviewed the LMEC/Dow Chemical rearrangement proposed by the Calpine Corporation, which specifically involves:

1. Decommissioning of the three Calpine generators at the Dow Chemical facility
2. Severing of the existing PG&E 115 kV feeds into Dow Chemical
3. Serving of Dow Chemical via an express feeder from the Los Medanos Energy Center 115 kV bus

PG&E's engineering analysis, under the assumptions enumerated above, indicates that the rearrangement does not cause any new adverse system impacts on PG&E's transmission facilities.

Please feel free to contact me with any questions. Thank you.

John Vardanian

Generation Interconnection Services - PG&E