

Pacific Gas & Electric Company's
Atlantic-Del Mar Reinforcement Project
Mitigation Monitoring, Compliance, and Reporting Program

Final Report



Prepared for:
California Public Utilities Commission

Prepared by:
Aspen Environmental Group

December 2006

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1.0 Introduction and Project Overview

The Final Construction Completion Report has been developed to summarize the monitoring activities conducted for the Pacific Gas and Electric (PG&E) Atlantic–Del Mar (ADM) Reinforcement Project. The ADM Project included the installation of approximately 5.3 miles of 60 kV single-circuit transmission line from the existing Atlantic Substation located in Roseville to the existing Del Mar Substation located in Rocklin, as well as the associated substation modifications. The California Public Utilities Commission (CPUC) as the Lead Agency for the project conducted the environmental review process and granted final approval of the project. Aspen Environmental Group implemented the Mitigation Monitoring Program to ensure compliance with project mitigation measures, compliance plans, and permit conditions during all phases of construction.

Chapter 1, Introduction and Project Overview, provides a brief overview of the ADM Project and project approvals granted by the CPUC. In addition, Chapter 1 outlines the role and responsibility undertaken by Aspen Environmental Group as the mitigation monitoring team, including pre-construction compliance review. The methods established for addressing non-compliance issues, changes in the project description or mitigation implementation, and extra workspace requirements are also discussed.

The ADM Project was constructed as two distinct segments: the 60 kV overhead transmission line segment and the 60 kV underground transmission line segment. In addition, modifications were made to the Atlantic and Del Mar Substations to accommodate the new line. The project construction work is discussed in Chapter 2. PG&E conducted the 60 kV overhead segment and substation modifications. Wilson Construction, Inc. was awarded the contract for construction of the 60 kV underground transmission line segment who subcontracted the trenching and line installation to Zayas Construction and the horizontal directional drilling operations to Cherrington. Additional subcontractors are covered in Chapter 2. Essex Environmental provided the environmental representation for PG&E. Essex provided construction inspectors/biologists, which are referred to as PG&E Environmental Inspectors (EIs) in the text.

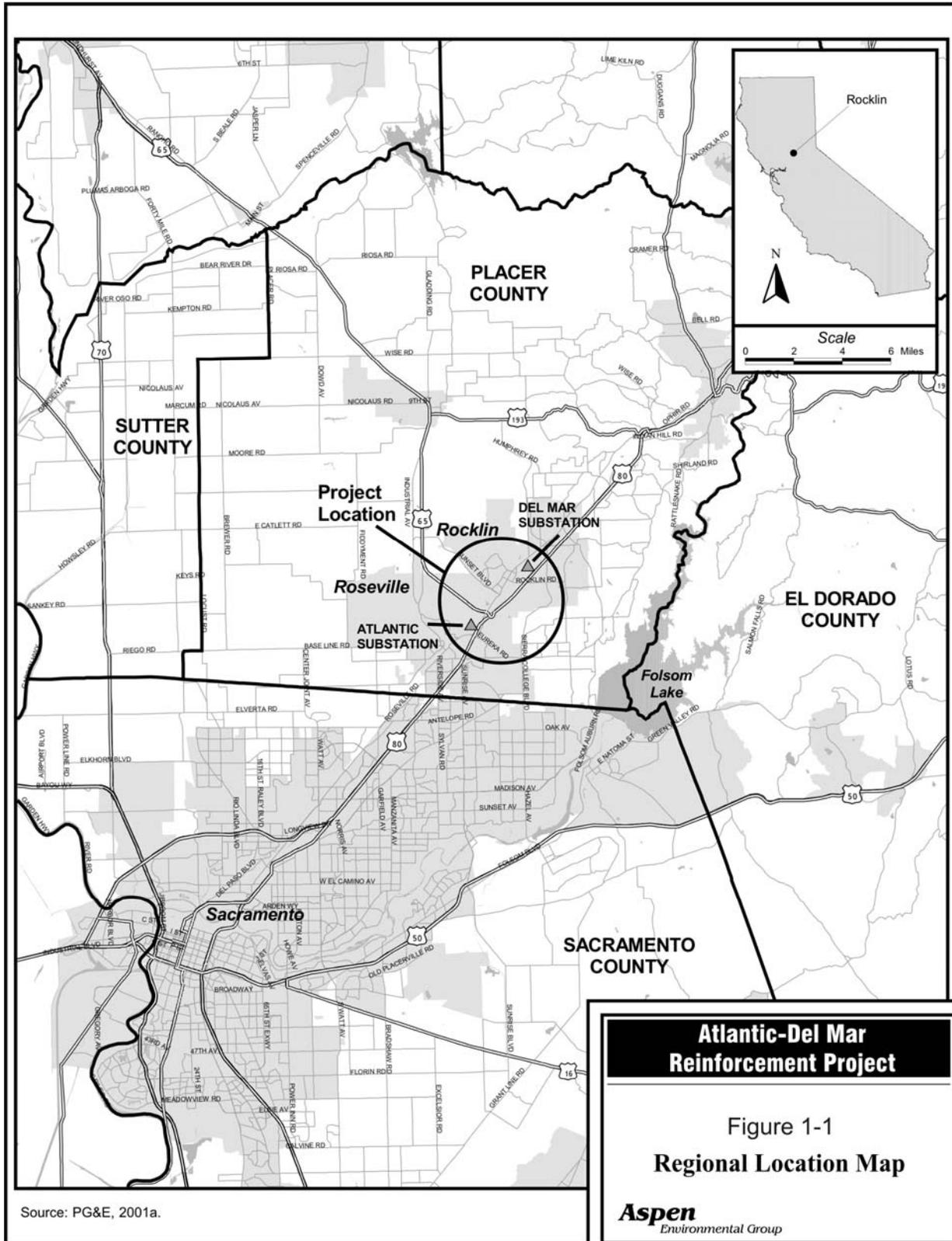
Chapter 3 provides a comprehensive summary of post-construction requirements for the project, and Chapter 4 presents monitoring issues and recommendations for future mitigation monitoring plans.

Mainline construction of the ADM Project took place between April 2005 and May 2006, while final clean-up and revegetation/landscaping continued into Fall 2006.

1.1 Overview of the PG&E ADM Project

PG&E has experienced a significant and constant increase in electric demand in the Rocklin–south Placer County area due to dramatic growth in population resulting in the construction of new homes and businesses. The project provided a second 60 kV line to serve the Rocklin–south Placer County area (see Figure 1-1). It was built to 115 kV standards so that, at some future date, PG&E could convert the line to 115 kV.

The ADM Project involved the installation of a new, approximately 5.3-mile 60 kV double-circuit transmission line from the existing Atlantic Substation (in the City of Roseville) to the existing Del Mar Substation (in the City of Rocklin). Modifications of the existing Atlantic and Del Mar Substations were conducted to accommodate the new 60 kV single-circuit transmission line.



On October 17, 2001, the CPUC released a Draft Mitigated Negative Declaration and Initial Study (MND/IS) for a 30-day review period. In response to numerous comments on potential visual impacts, the visual resources analysis had been revised and the MND/IS recommended mitigation requiring that the power line be installed underground from a location south of Sunset Boulevard to North of Midas Avenue in the City of Rocklin. As a result, the analysis of all other environmental issue areas was re-evaluated.

The MND/IS was prepared by Aspen Environmental Group under contract to the CPUC in accordance with the California Environmental Quality Act (CEQA) to inform the public and to meet the needs of local, state, and federal permitting agencies in considering the project proposed by PG&E. A certificate of Public Convenience and Necessity was granted by the CPUC on February 13, 2003 (State Clearinghouse #2001102087).

1.2 Role of Aspen Monitoring Team

The Aspen Monitoring Team was composed of the Program Manager (Susan Lee), Project Manager (Vida Strong), and the following Environmental Monitors (EM):

- Christopher Meyer (Lead EM)
- Anne Sweet Coronado (EM)
- Heather Stiles (EM)
- Jody Fessler (EM)

Aspen's Program Manager, Susan Lee, had the authority to commit Aspen Team resources and was responsible for all contractual matters.

Aspen's Project Manager, Vida Strong, supervised all project monitoring activities. She was responsible for direct communication with the CPUC, including preparation of weekly reports. Other responsibilities included managing the field monitoring team. She oversaw the issuance of Project Memoranda and Non-Compliance Reports and prepared recommendations for CPUC consideration on Project Notices to Proceed with Construction and Variance Requests.

The CPUC Lead EM served as a resource to the EMs for the interpretation and treatment of non-compliance activities.

The CPUC EMs reviewed pre-construction compliance materials for completeness and performed in-field monitoring for compliance with mitigation measures, approved plans, and agency requirements during all construction activities. In the field, they served as the main point of contact for PG&E, as well as for a variety of federal, state, and local agencies. CPUC EMs prepared and submitted daily and weekly compliance reports to the Aspen Project Manager. The CPUC EMs also provided field input on Variance Requests and attended meetings held by PG&E and its contractors. The CPUC EMs have been trained in a number of disciplines including environmental science, biology, and chemistry and are experienced in compliance monitoring. CPUC EMs Anne Sweet Coronado and Heather Stiles conducted the majority of the monitoring on a random, part-time basis. CPUC EM Jody Fessler conducted the majority of the pre-construction compliance review.

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1.3 Pre-Construction Compliance Review and Notices to Proceed

PG&E submitted a Mitigation Implementation and Monitoring Plan, which outlined the Company's approach to implementing the mitigation measures and permit conditions applicable to the ADM Project. In addition, several specific compliance plans were submitted to satisfy federal and state agency requirements, including:

- Worker Environmental Training Plan
- Hazardous Substance Control and Emergency Response Plan
- Cultural Resources Treatment Plan
- Paleontological Resource Management Plan
- Storm Water Pollution Prevention Plan (SWPPP)
- Upland and Wetland Mitigation Restoration and Revegetation Plan
- Traffic Control Plans for Cities of Roseville and Rocklin

These compliance plans were reviewed by Aspen prior to the start of construction to ensure that appropriate environmental protection would take place. In addition, Aspen tracked the necessary permitting requirements to ensure that all the applicable agency permits had been issued prior to construction. Permits issued for the project included:

Federal:

- U.S. Fish and Wildlife Service: Endangered Species Act, Section 7 compliance; Concurrence with determination of no take of listed species documentation
- U.S. Army Corps of Engineers: Clean Water Act, Section 404/10 Permit (Nationwide) 12 and 33

State:

- California Public Utilities Commission: Certificate of Public Convenience and Necessity; Notice to Proceed
- California Department of Fish and Game: Streambed Alteration Agreement #1600-2003-382
- Regional Water Quality Control Board (RWQCB): National Pollutant Discharge Elimination System (NPDES) – Storm Water Pollution Prevention Plan; Section 401 Water Quality Certification or Waiver of Waste Discharge Requirements
- Regional Water Quality Control Board (RWQCB): Central Valley Region resolution #R5-2003-008 approving waver of reports of waste discharge

Local:

- City of Roseville: Encroachment Permit
- City of Roseville: Tree Removal Permits
- City of Rocklin: Encroachment Permit
- City of Rocklin: Tree Removal Permits

Reconnaissance-level surveys for general plant and wildlife, including vernal pool crustaceans, were conducted in 2000. A habitat assessment was conducted and released by Jones and Stokes in 2002. Protocol level survey findings for listed vernal pool branchiopods were submitted by Jones and Stokes in 2003. Focused biological surveys for special-status plant and wildlife species, wetlands, and noxious weeds were conducted in the spring of 2005, prior to construction. An environmental inspector/biologist representing PG&E was present during all construction activities in sensitive areas.

Culturally sensitive areas were identified within the corridor of the 60 kV transmission line. Recorded cultural resources sites A-SS and CA-Y2 were identified. A Cultural Resource Treatment Plan was submitted to the CPUC in the event that there was an unanticipated discovery of cultural resources. All construction personnel were trained regarding the potential for presently unknown cultural resources and the procedures to treat unexpected discoveries. Archeologists representing PG&E, provided by Far Western, were present during all of the underground excavation and construction in delineated culturally sensitive areas. One unanticipated discovery of a cultural resource occurred; however, it was determined insignificant.

As part of the PG&E ADM Mitigation Implementation and Monitoring Plan, all employees working on the project were required to attend an environmental training session before they could begin work. PG&E’s environmental representatives presented the training session, which covered environmental and cultural resource issues, state and federal laws, and reporting procedures.

When necessary pre-construction compliance documentation was satisfactorily submitted, recommendations for Notices to Proceed (NTPs) were prepared by Aspen for CPUC consideration. Two NTPs for Construction were issued by the CPUC for the ADM Project (see Table 1-1). Once approvals from other agencies were received, construction could commence in accordance with the NTPs for Construction and issued permits.

Table 1-1. NTPs for Construction

CPUC NTP	Description	Date Issued
#1	Mobilization within the Atlantic and Del Mar Substations, and overhead installation from the Del Mar Substation to the railroad right-of-way (northern 0.25 miles), City of Rocklin.	November 3, 2003
#2	Construction of the remaining overhead portion (approximately 4 miles) and the underground portion (approximately 1.3 miles) of the ADM Project, within the Cities of Roseville and Rocklin in Placer County.	March 8, 2005

1.4 Compliance Monitoring

Compliance monitoring by the CPUC EMs was intended to chronicle and document PG&E’s compliance with project mitigation measures, compliance plans, and permit conditions. Compliance monitoring was implemented to minimize or eliminate potential significant impacts and to protect environmental resources. Given the scale of the ADM Project, monitoring was conducted by the CPUC EMs on a random, part-time basis.

A Non-Compliance was defined as “any deviation from applicable mitigation measures, applicant-proposed measures and project parameters, permit conditions or requirements, and approved plans.” A Project Memorandum was a written warning of a non-compliance activity. Non-Compliance Reports were issued when chronic non-compliance activity occurred or a blatant disregard for project mitigation measures, compliance plans, or permit conditions was demonstrated. Project Memoranda and Non-Compliance Reports were typically issued after an initial verbal warning. The compliance record for the ADM Project is discussed in Chapter 2.

1.5 Coordination and Communications

In field communications were conducted by the CPUC EMs with PG&E’s EIs and other project personnel. Verbal warnings and written communications (Project Memoranda or Non-Compliance Reports) were utilized to notify PG&E and its contractors of potential non-compliance activities. Field observations were

logged daily by the CPUC EMs. Weekly reports were submitted to CPUC and other agencies documenting compliance, requested project changes, construction progress, and interactions with other agencies.

1.6 Variance Requests

Variance Requests were submitted by PG&E to the CPUC for changes in the approved project description, including changes in construction technique, additional extra workspace needs, or reduction in mitigation requirements. Each Variance Request submitted by PG&E was first reviewed by Aspen for completeness. If incomplete, a request for information was prepared by Aspen and sent to PG&E. When complete, each request was analyzed, including field verification and resource/local agency consultation, to determine if new impacts or an increase in significant impacts would result. After analysis of the request, Aspen prepared a written recommendation of approval or denial for the CPUC. As appropriate, mitigation measures or other agency conditions were required by the CPUC to avoid, or reduce to a less than significant level, any identified impacts. The Variance Requests submitted for the ADM Project are presented in Chapter 2.

2.0 60 kV Transmission Line Segment and Substation Modifications

2.1 Description of the 60 kV Transmission Line and Substation Modifications

The overhead power line portion of the proposed project involved installing approximately 4 miles (21,000 feet) of new 60 kV line on tubular steel poles (poles). The underground portion involved installation of 1.3 miles of conduit set in concrete, strung with underground cable connecting to the overhead segment at two transition poles. The project provided a second 60 kV line to serve the Rocklin–south Placer County area. It was built to 115 kV standards so that, at some future date, PG&E could convert the line to 115 kV.

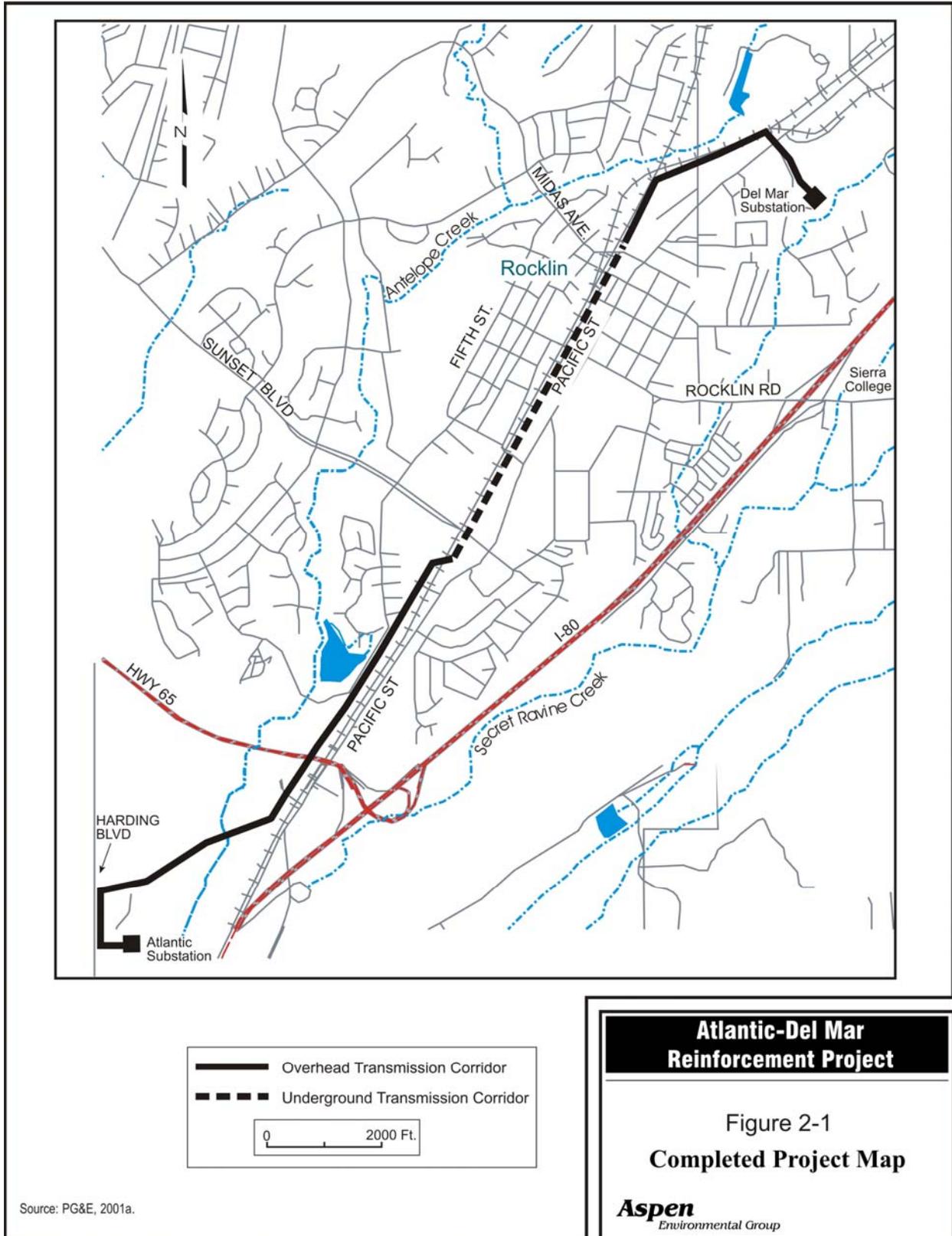
The new power line begins at Atlantic Substation and proceeds north aboveground adjacent to Harding Boulevard, following the existing 60 kV line, for approximately 900 feet. The line turns east, continuing to follow the existing line, and proceeds approximately 2,000 feet, crossing Antelope Creek before reaching the Union Pacific Railroad (UPRR) tracks. At the railroad tracks, the route turns northeast (the existing power line crosses the railroad and goes east at this point), and continues parallel to the west side of the tracks, crossing State Route 65 (SR65). The line crosses the railroad tracks south of the Kinder Morgan Tank Farm and continues northeast on the east side of the railroad tracks. Just south of Sunset Avenue the line transitions underground and follows parallel to the UPRR tracks for 1.3 miles, and then transitions back above ground just north of Midas Avenue. The line then turns east, crossing Pacific Street, where it meets the 60 kV power line. The existing line was reconstructed to accommodate the new line on a single set of double-circuit poles along Sierra Meadows Drive to the Del Mar Substation (see Figure 2-1).

To accommodate the new line, modifications were made at both the Atlantic and Del Mar Substations.

2.1.1 Overhead Segment

The overhead segment is approximately 4 miles long and begins at the Atlantic Substation in the City of Roseville. The 60 kV line heads north from Pole #25 to Poles #24 and #23 adjacent to Harding Boulevard. The line then turns east and proceeds approximately 2,000 feet, through Poles #22 and #21, and crosses Roseville Parkway and Antelope Creek through Poles #20 and #19 before reaching the UPRR tracks. Following the railroad tracks, the line turns northeast, and continues parallel to the west side of the tracks, crossing SR65 traveling through Poles #18, #17, #16, #15, #14, #13, #12, and #11, crossing the east side of the tracks in the vicinity of the Tank Farm to Transition Pole #10 south of Sunset Boulevard. At Transition Pole #10, the line proceeds for approximately 1.3 miles underground until reaching Transition Pole #9 located north of Midas Avenue, where it comes up and continues overhead along the east side of the UPRR tracks through Poles #8, #7, #6, #5, and #4, crossing Pacific Street. At this point, the overhead line meets the existing 60 kV power line and follows parallel through Poles #3, #2, and #1 to the Del Mar Substation.

The overhead segment includes a single pole structure type designed to support a “477 aluminum conductor steel strand.” The circuit has three conductors per pole. The vertical distance between the two conductors is 10 feet. The span between poles averages 800 feet, although distances vary depending on available right-of way, topography, and other alignment issues.



Along the overhead segment, the 60 kV line crosses protected vernal pools covered by the Environmental Species Act. PG&E consulted with the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG), and according to their assessments, mitigated to avoid all loss of special status resources. A USFWS Section 7 concurrence with determination of no take of listed species letter was issued, which made a determination of no take contingent on implementation of habitat protection requirements.

Culturally sensitive areas occur along the overhead alignment. Cultural monitoring was implemented in applicable areas.

2.1.2 Underground Segment

The project was installed underground for 1.3 miles within the UPRR corridor from immediately south of Sunset Boulevard and east of the UPRR right-of-way, in the vicinity of the existing Kinder Morgan Tank Farm, to a location approximately 120 feet north of Midas Avenue, also on the east side of the UPRR right-of-way.

The underground transmission lines required one trench approximately 3 feet wide and 6 feet deep, which holds 4 to 6 PVC conduits encased in concrete to house transmission lines as well as communications lines. A horizontal directional drill was used to cross under Sunset Boulevard. There are four manhole vaults spaced approximately 2000 feet apart located along the underground segment from manhole Vault #1 located next to Transition Pole #10 south of Sunset Boulevard to Vault #4 located next to Transition Pole #9 north of Midas Avenue. Along the underground segment, other utilities within the corridor included the existing Kinder Morgan petroleum pipeline.

The underground segment crossed a CDFG jurisdictional drainage (#30) via trenching. A 1603 Streambed Alteration Agreement was granted for the work. In addition, the underground line crossed wetland areas and Army Corps of Engineers Section 404/10 Nationwide 12 and 33 permits were granted.

Culturally sensitive areas occur along the underground alignment. Cultural monitoring was implemented in applicable areas.

2.1.3 Substation Modifications

PG&E conducted the substation modifications since the yards were active substations and were energized or “hot.”

A new 60 kV breaker and bay was installed within the fenced area at the existing Atlantic Substation. The new line was placed on three new double-circuit poles within the Atlantic Substation property, along with the existing 60 kV circuit, and routed toward the Del Mar Substation. New 60 kV bays were added to the end of the 60 kV bus.

In order to permit a possible future voltage upgrade, the clearances and equipment at the substations were rated 115 kV, although the operating voltage is proposed to remain 60 kV. New equipment and clearances were also rated 115 kV.

2.2 Construction of the 60 kV Transmission Line and Substation Modifications

2.2.1 Notices to Proceed for the 60 kV Transmission Line and Substation Modifications

Two Notices to Proceed (NTP) were issued by CPUC for the 230 kV transmission line (see Table 1-1). The first NTP was issued on November 3, 2003, which authorized mobilization within the Atlantic and Del Mar Substations, and overhead installation from the Del Mar Substation to the railroad right-of-way (northern 0.25 miles), in the City of Rocklin. The second NTP was issued on March 8, 2005, for construction of the remaining overhead portion (approximately 4 miles) and the underground (approximately 1.3 miles) of the Atlantic–Del Mar Reinforcement Project, within the Cities of Roseville and Rocklin in Placer County. PG&E had requested that authorization to construct the project be conducted in two segments to allow construction to proceed while additional pre-construction compliance requirements were being satisfied. Obtaining the UPRR right-of-way access delayed the start of construction considerably.

2.2.2 Construction Highlights

Construction of the 60 kV transmission line began on April 18, 2005, after outstanding UPRR and agency approvals were received. Construction of the 60 kV above ground transmission line was accomplished by PG&E crews conducting tower erection/stringing methods. PG&E crews also conducted the modifications made to the Atlantic and Del Mar Substations. Wilson Construction was awarded the contract for construction of the underground portion of the project. Trenching and conduit installation was subcontracted to Zayas and Interstate Safety. Bore work was subcontracted to Cherrington.

Tower Installation/Stringing

The tower installation began on April 18, 2005, and included the construction of tower foundations, pole erection, and conductor stringing. The foundation construction consisted of drilling pits about 6 feet in diameter and 15 feet deep (exceptions did occur due to substrate conditions encountered in the field). All spoils were placed in a dump truck and were taken off-site. Crews installed the supporting structure foundations, placing concrete forms that extended slightly above the natural ground level over the hole and poured concrete up to the top of the form (see Figure 2-2). The pole erection consisted of erecting the supporting structure body (steel poles) in sections by the use of a crane. Conductor stringing consisted of attaching insulators, stringing the electrical conductor cables, and terminating cables. All pole sites were accessed utilizing existing access roads except for two cases requiring Temporary Extra Workspace (TEWS) and Variance approvals. A 100-foot by 100-foot area of disturbance was permitted at each pole location. Per the project mitigation requirements, California tiger salamander (CTS) aestivation habitat surveys were required prior to work at each pole area. In addition, ongoing bird surveys were conducted. Staging for the overhead work occurred at the Atlantic and Del Mar Substations.



Figure 2-2. Completed foundation base at Pole #17

Starting just outside of and extending north of the Atlantic Substation, pole foundations #25, #24, #23, #22, and #21 were the first to be constructed. Just prior to the work, the existing access road and approximately 100-foot by 100-foot tower pad areas were mowed. Hay bales, sediment fencing and flagging were installed around protected vernal pool areas located near Pole Foundations #24, #23, #22, and #21 as required by the USFWS Concurrence with Determination of No Take Letter (see Figure 2-3). The PG&E EI did not, however, conduct the hay bale and sediment fence installations until the CPUC EM referenced the USFWS requirements and stated that any deviation would require documented approval by the USFWS. Pole Foundation #25 occurs on the west side of Cultural Resource Site A-SS. Far Western provided archaeological monitoring of the ground disturbance. The project plans identified a historic dump site and elevated lead and arsenic levels in soils around Pole Foundation #24. Crews controlled dust during augering and took spoils to Forward Landfill, a Class II facility. Approximately 250 feet from Pole #21 a red-tailed hawk’s nest was identified. The site was closely monitored and no evidence of disturbance was noted.



Figure 2-3. Vernal pool area (foreground) protected by installed erosion controls surrounding Pole #4

The next pole foundations installed included #20 through #11. To gain access to Pole #20, a very overgrown two-track road was planned for use; however, no connection to a main road occurred except for a highly disturbed section of land adjacent to an existing parking lot. A TEWS request was submitted and approved for the area on May 12, 2005.

On May 12, a compliance issue occurred on the overhead segment. The CPUC EM found that the contractor had graded over a culvert of a drainage which had created copious amounts of fine loose dirt. After discussions with the PG&E EI, the fine dirt was replaced with gravel and erosion controls protecting the drainage were installed. Groundwater was encountered during augering at Pole #16. Crews were able to continue with foundation setting and the concrete pour without water discharge.

A sensitive vernal pool occurs east of the Pole #15 area and the CPUC EM had to again remind the PG&E EI that prior to work at the location that installation of hay bales and sediment fence were necessary per the USFWS requirements. Another issue occurred on May 17, 2005, when the CPUC EM found that crews had been discharging (through filter fabric) groundwater encountered during the Pole #15 augering to a nearby storm drain. The CPUC EM stated that the project permits did not allow that type of discharge. On May 18, Essex submitted follow-up correspondence and Regional Water Quality Control Board (RWQCB) Central Valley Region Resolution Approving Waiver of Reports of Waste Water Discharge. They also submitted correspondence with the RWQCB stating that encountered groundwater may be discharged to a contained area (i.e. a pit or bermed area) to prevent discharge to surface water.



Figure 2-4. Auger of the foundation hole for Pole #20

In early June, crews augered the Pole #19 and #20 foundations (see Figure 2-4). Lots of rocks were encountered in the Pole #20 auger, which slowed progress. Existing access roads did not extend to the Pole #19 location. Variance Request #2 was submitted and ap-

proved which allowed the use of a small area of land to enable site access to the tower. The area was reviewed and was found to be devoid of resources. Weeds were identified at the Pole #19 and #20 locations. A pressure washer was brought on-site to wash all vehicles and equipment prior to traveling off-site.

At the Pole #12 location, access required movement adjacent to a drainage area. Sediment controls were installed to protect the drainage. A protected Valley Elderberry shrub occurred near the access road and a 30-foot buffer and flagging were installed. In addition, exclusion flagging was placed at the drip line of a nearby oak tree. The crews moved on to the next work location and mowed weeds leading to Pole #7. Weed material was placed in plastic bags and was disposed of.

On June 22, the PG&E EI/biologist gave information that 22 large trees had been removed along the overhead segment by a PG&E contractor (the trees were slated for removal as part of the project plans and was required for conductor cable clearance). He stated that he had not been notified of the work due to a miscommunication by PG&E project management and thus he did not conduct pre-removal surveys or monitor the work (see Figure 2-5). Project Mitigation Measure B-3 states that “All tree removal activities shall occur between November 1 and February 15 to avoid avian breeding seasons . . . All trees within 250 feet of any construction shall be surveyed for active nests. If active raptor nests are found within 250 feet of tree removal



Figure 2-5. Post tree removal

. . . a construction free buffer of at least 250 feet around the nest shall be maintained.” The CPUC EM issued a Non-compliance Report (NCR) noting the out of season removals and lack of crew training, surveys and monitoring. The NCR also listed corrective measures which required that biological surveys be conducted immediately at all of the removal sites and site access areas, and that results be submitted to the CPUC and CDFG. On June 23 the PG&E EI provided that four additional trees needed to be removed prior to November 1 (as required by Mitigation Measure B-3). On June 28, Variance Request #3 was submitted requesting permission to conduct tree removals outside of the November 1 through February 15 window. Variance Request #3 was approved on July 7 and conditioned that CDFG must also approve the tree removals. PG&E submitted the NCR follow-up report July 17, and provided that no evidence of take of migratory birds or their nests had occurred. In addition, PG&E provided information that a raptor survey had been completed in March 2005, and no raptor nests had been identified at that time. The four additional trees slated for removal in the City of Roseville were removed. The EI conducted surveys immediately prior to removal and monitored the removal activities.

CTS surveys continued and potential burrows were identified near Transition Pole #9 north of Midas Road. The area was marked and excluded; however, follow-up surveys conducted by a CTS expert showed the area not to be potential habitat.

During augering of the foundation hole for Pole #8, crews hit very hard granite rock at a depth of 13 feet, 2 feet shy of design depth. The foundation was redesigned effectively widening the foundation base. At Pole #7, crews again hit very hard granite at 13.5 feet, and the auger equipment broke down. Widening the base would not work for this location. PG&E engineers visited the location. Crews eventually entered the 5.5-foot-diameter hole and drilled a number of small holes into the rock and installed rock anchors which attached to the foundation cage.

As crews continued the remaining foundation work, tower installation began at the completed foundation areas. During the week of July 3, 2005, tower segments were delivered to pole sites #15 through #20. Crews assembled the towers on-site. The PG&E EI took care to ensure that the sensitive vernal pool areas were avoided during this process. The poles were then installed and bolted to the foundations (see Figure 2-6). Following installation, hydraulic equipment was used to further pound the pole segments more tightly together.

In mid-July, crews started work on Pole #14. An exclusion zone was constructed around the nearby vernal pool as well as two oak trees. Tower work was confined to a 40-foot by 40-foot area due to resource proximity.



Figure 2-6. Pole installations north of the Atlantic Substation; the side arms were later erected just prior to stringing operations

Crews moved on to work on foundations for Poles #5 and #6 which are located adjacent to the UPRR tracks. Crews had not provided railroad representatives with advance notification, thus initially, no heavy equipment was allowed within 25 feet of the tracks. The foundation holes were dug to 5-foot depth by hand. All following work adjacent to the UPRR tracks was coordinated with an on-site UPRR representative for safety reasons. Pole #6 is located near cultural resource site YH-2. The resource needed to be crossed to access the Pole #6 site. PG&E submitted Variance Request #4 which was approved on July 7, granting a 15-foot travel corridor across the site. The corridor areas were roped off in the field. All ground-disturbing activities at Pole #6 occurred outside of the resource boundary and buffer. A tail board was conducted to reiterate unanticipated cultural discovery procedures prior to work at the location. Augering commenced and again crews hit very hard granite at 10 below ground surface at the Pole #6 site. At the Pole #5 site, crews were able to auger to the required 15-foot depth.

Crews moved on to auger Poles #1, #2, #3, and #4. Continuing to be an issue, crews had again hit hard rock shy of depth at the Pole #1 excavation. PG&E re-engineered the Pole #1 and #6 plans. As completed at the Pole #7 location, holes were drilled into the rock, rock anchors were installed, and the foundation cages were installed. The foundation cages were set in concrete. Groundwater was additionally encountered at Poles #7 and #2. The water was pumped into bermed areas.

By early September 2005, all of the foundation and pole erection work was complete except for Poles #1, #2, and #3, and Transition Poles #9 and #10. Transition Poles #9 and #10 were installed concurrent with the underground work. Poles #1, #2, and #3 were later erected when the adjacent lines at the Del Mar substation were de-energized. East of Pacific Street, along Sierra Meadows Drive, both the new 60 kV line and the existing 60 kV circuit from the Atlantic Substation were placed on two new, double-circuit poles and routed to the Del Mar Substation. The wood poles which had carried the existing Atlantic–Del Mar 60 kV circuit and a distribution circuit in this area were topped off (i.e., the top third of the poles were cut off leaving the existing distribution circuit attached) after the 60 kV circuit had moved to the new poles. Crews disposed of hard wire and wooden poles that were part of the old line which were replaced with steel poles.

During December 2005, crews installed guard structures at the street and highway crossings between the Atlantic Substation and Pole #18. Two wooden guard structures were installed near SR65. In addition, travelers and insulators were installed between Poles #25 and #19 followed by line stringing through to Pole #18. The next pulls could not occur until Transition Pole #10 was installed. During stringing operations, a crane got stuck in the mud between Poles #18 and #19. It was removed and down slope erosion controls were installed to protect Antelope Creek.

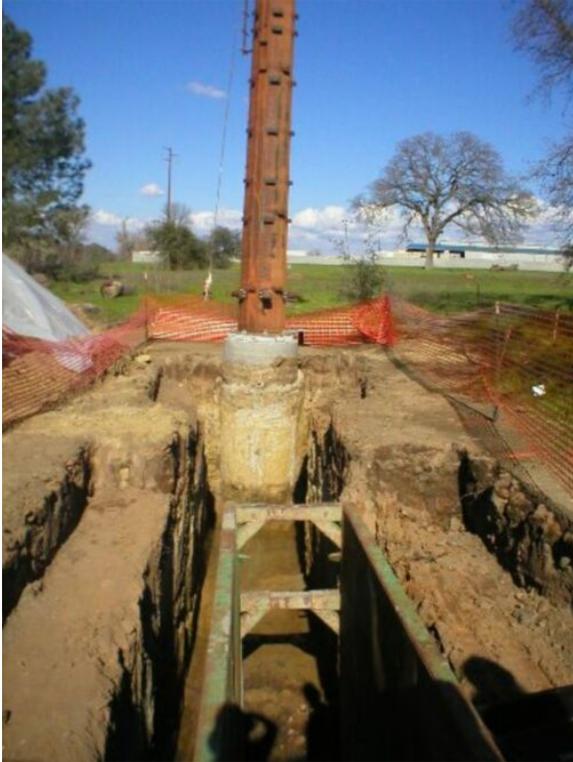


Figure 2-7. Foundation modification work at Transition Structure #9

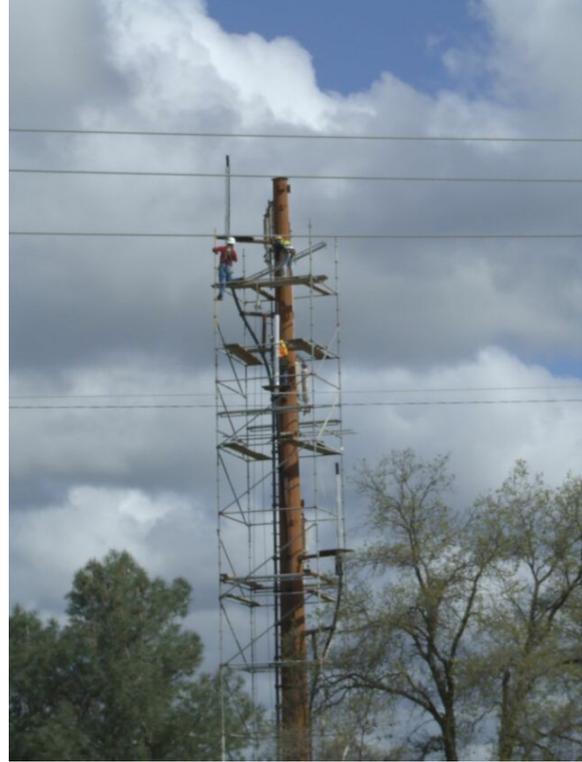


Figure 2-8. Transition Pole #10

The foundations for Transition Poles #10 and #11 were augered in late January 2006. The foundation cages were installed and set in concrete. However, it was discovered that modifications to the foundations were needed to accommodate the hardware designs. The modifications were made (see Figure 2-7) and the overhead line was strung from Poles #10 through #18 by early February using existing access road locations, reel trailers and helicopters. In March, ground conduit and jumpers were connected to the top of Transition Poles #9 and #10 (see Figures 2-8 and 2-9).

Due to seasonal requirements, nesting bird surveys were conducted along the overhead line prior to the remaining stringing activities. In mid-March 2006, a pair of red-shouldered hawks were identified occupying a stick nest and incubating eggs off Yankee Hill Road approximately 250 feet north of the right-of-way and on the outer edge of the construction buffer. The PG&E EI contacted CDFG and procedures were outlined for monitoring the nest during stringing activities with a halt of work if disturbance to the nesting birds were to occur. No disturbance was identified and construction progressed swiftly through the area in late April. The PG&E crew installed a wood pole on Americana Way in Rocklin to allow the clearance between the conductor and the recently installed distribution line. The conductor was strung and tensioned between Transition Pole #9 and the Del Mar Substation using a helicopter to place line through the poles; ropes were pulled through the pole pulleys (see Figure 2-10). During flight, the helicopter fuel cap leaked, causing droplets of jet fuel to fall to the ground. The helicopter was brought down to the ground and repaired. The spilled fuel evaporated immediately.

In late March, the PG&E EI identified a great horned owl nest with two juveniles in a cottonwood tree approximately 100 feet from Pole #17 near Antelope Creek. After repeated monitoring it was determined that the juveniles had fledged by mid-April prior to the return to work in the area when crews strung fiber optic cable between Transition Pole #10 and the Atlantic Substation using a helicopter.



Figure 2-9. Completed Transition Pole #9



Figure 2-11. Overhead line



Figure 2-10. Helicopter stringing

In May 2006, miscellaneous finishing work occurred including the removal of silt fence and straw wattles around the sensitive resource areas.

Concurrent with the underground line, the overhead line was tested and brought online incrementally during the week of May 14 through May 20, 2006 (see Figure 2-11).

A final walk-through of the overhead alignment occurred on May 25, 2006.

Trenching and Vault Installation

The underground transmission line required one trench approximately 3 feet wide and 6 feet deep, which holds 4 to 6 PVC conduits encased in concrete to house transmission cable as well as communications lines (see Figure 2-12). Sunset Avenue was crossed utilizing a horizontal directional drill which is discussed in the next section. There are four manhole vaults spaced approximately 2000 feet apart located along the underground segment from manhole Vault #1 located next to Transition Pole #10 south of Sunset Boulevard to Vault #4 located next to Transition Pole #9 north of Midas Boulevard (See Table 2-1). Vault work entailed excavation up to a 28-foot by 10-foot by 15-foot-deep hole into which vault box components were lowered by crane. Transmission cable was pulled through the conduit from the vault

locations. The cable was then spliced at the vault locations. Along the underground segment, other utilities within the corridor included the existing Kinder Morgan petroleum pipeline.

Underground construction crews mobilized to the site on September 1, 2005. Wilson was awarded the contract and conducted the segment engineering. Wilson subcontracted the trench excavation and conduit installation to Zayas construction, later adding Interstate Safety crews for conduit work. The underground alignment encountered several culturally sensitive areas. A cultural monitor was required to be present for work in all culturally sensitive areas as specified in the Project Mitigation Measures, as well as the project Cultural Resources Treatment Plan. Far Western conducted the project cultural monitoring. Kleinfelder conducted soil testing and Niels Controlled Blasting conducted sub-surface rock blasting.

A staging area and some smaller extra work space areas for the underground segment were approved during the NTP process. The staging area was located adjacent to the Kinder Morgan Tank Farm near Transition Pole #10 and the bore entry area. On September 1, additional space needs were identified for three locations. Variance Request #5 was submitted on September 2, for the three work areas. The first location was on the south side of the Sunset Avenue bore area where extra space was needed; however, the area was constrained on both sides by existing features. On one side lay a berm area containing burrows which could have served as potential CTS aestivation habitat. Just beyond the berm lay a protected wetland area. The PG&E EI roped the area off for exclusion and installed erosion controls prior to boring operations. Opposite the berm lay an oak tree. The submitted variance proposed to either level the berm or remove the oak tree to gain the space needed for boring operations, as well as for the placement of Transition Pole #10. Also included in the request were two extra work space areas. One was an existing disturbed area which extended outside of the work area right-of-way needed for staging. The other area lay through a delineated wetland, where PG&E requested to pull the 30-inch conduit during the Sunset Avenue bore operations. The Variance Request was approved September 8, and sited that agency approvals would be required for jurisdictional areas and or resources including USFWS, CDFG and USACE. In mid-September, a CTS specialist investigated the berm noted in Variance Request #5, as well as the entire project area, and determined that viable habitat was not present in the berm or anywhere in the project area.

On September 7, a kickoff meeting was held for the underground work. PG&E, Essex, Far Western, Kleinfelder, and Niels Controlled Blasting were in attendance. Environmental issues were briefly discussed.



Figure 2-12. Thermal concrete pour over conduit installation north of Farron Road

Table 2-1. Underground Manhole Vaults for the 230 kV Transmission Line Construction

Manhole Vault #	Location
Manhole Vault #1	Located next to Transition Pole #10 south of Sunset Boulevard
Manhole Vault #2	Located north of Farron Road.
Manhole Vault #3	Located north of the intersection of Railroad Avenue and Rocklin Road
Manhole Vault #4	Located next to Transition Pole #9 north of Midas Avenue

All equipment brought onto site was checked for leaks. Crews installed sediment fencing along Wetland #5 and “keep out” and “sensitive resource” signs were placed around environmentally sensitive areas. Crews also installed erosion controls around Seasonal Drainage #12.

In mid–September, crews began excavation for Vault #2 located just to the north of Farron Road. Crews excavated a 28-foot by 10-foot area to a depth of 15 feet. Crews also began trench excavation south from the vault location and began laying conduit.

During initial construction an issue of topsoil separation arose. Zayas Construction had at first argued whether topsoil separation was necessary, but finally agreed to the requirement after the PG&E EI and CPUC EM referred them to the project documents. Throughout operations Zayas crews separated topsoil and stored it on-site adjacent to the trench line. Subsoil was stored at the yard and eventually taken off-site. Weeds were removed as outlined in the project mitigation measures.

Far Western monitored the Vault #2 and extending trench excavation which occurred in a culturally sensitive area. No culturally significant or important discoveries occurred; however, in early October three concrete structures were encountered. Far Western documented the findings and determined the structures to be culturally insignificant. The concrete structures were removed from the trench line. In addition, the excavation spoils were chemically tested and results showed elevated diesel levels. The spoils were taken to the appropriate disposal facility.

Following conduit installations, flowable thermal concrete (FTC) was poured over the installed conduit. At the end of each work day all open trench was covered with chain link fence and then topped with construction fencing (see Figure 2-13). Each morning the Essex EI/biologists walked the trench and checked for trapped wildlife.

The presence of hard subsurface rock was identified sporadically along the entire underground alignment. In order to facilitate the underground construction, relief hole drilling, rock hammers and explosives were used. In late October 2005, in order to aid trenching operations, a drill rig drilled a series of relief holes within the rock at the corner of Rocklin Road and Railroad Avenue. In mid–September, Niels Controlled Blasting drilled 76 blast holes from Station 18+00 through 19+30, and on September 23 a blast was executed without incident. In December 2005, crews blasted rock on the south side of Railroad Avenue at Station 42+00. At the Vault #3 location north of the intersection of Railroad Avenue and Rocklin Road, a rock hammer was brought to the site to excavate Vault #3. This proved too time-consuming and Niels Controlled Blasting blasted the rock on December 22 and 23. Large boulders remained and the rock hammer was used to break up the boulders (see Figure 2-14). Stormwater entered the Vault #3 excavation and the area had to be continually dewatered during this



Figure 2-13. Trenchline excavation and conduit installation



Figure 2-14. Rock hammering at Vault #3

process. The vault was set and backfilled in early January. Also in January crews used a rock hammer to break up granite along the trench north of the Vault #3 location along Railroad Avenue.

As construction continued, the PG&E EI maintained sediment controls around Seasonal Drainages #5, #6, and #30, and Ephemeral Drainages #007 and #12. Straw wattles were installed around the right-of-way and spoils material.

The CDFG Streambed Alteration Agreement (SAA) required that work in jurisdictional areas be completed by October 15. In late September, Zayas began preparations to trench through Drainage #30, where, as outlined in the CDFG SAA, a dam was constructed on either side of the work area and a pump pipe network was installed to pump water past the work areas so that downstream flow was not interrupted. To fuel the pump, a fuel tank and power cell were placed next to the area in secondary containment. Zayas began excavation through Drainage #30 on October 1. Zayas quickly completed the conduit installation and FTC concrete pour (see Figure 2-15). The bank and topsoils were placed next to the drainage, as well as the subsoils in discrete piles. On Sunday, October 2, it was discovered that the pumps, which were connected to sensors, had stopped functioning. Zayas had been monitoring the pump system over the weekend. Due to the pump failure, water from the drainage was not successfully pumped around the work area, and a buildup and overflow of the dam occurred. The SAA conditions require that water flow be maintained to support downstream aquatic resources. Due to the pump failure, downstream flow was not maintained, but because the second dam was not breached, no contaminated or sediment-laden water was allowed to flow downstream. Immediate notifications were not made to the CPUC nor CDFG. A follow-up incident report was submitted by Essex. Crews completed the back-fill and restoration work at Drainage #30 on October 14, meeting the permit deadline. The drainage was restored per protocols outlined in the SAA, including restoring slope contours and replacement of the bank. The area was reseeded with the wetland seed mix, as outlined in the project’s restoration plan. Jute matting was placed over the seed (see Figure 2-16). The dam and pump components were dismantled.

During trenching operations, crews encountered unstable material in a number of locations along the underground alignment. Between Stations 55+00 and 55+60, unstable material was encountered, which was not conducive to providing a stable trench. Crews



Figure 2-15. Concrete pour over the conduit installation within Drainage #30



Figure 2-16. Drainage #30 restoration



Figure 2-17. Excavation and conduit installation north of Rocklin Road

temporarily went on to work at other areas. In early February, north of Rocklin Road, crews again encountered unstable soils (see Figure 2-17). Wilson engineered plans to deal with the unstable soil conditions throughout the underground alignment. West of Rocklin Road and north of Farron Road, crews installed drainage rock to bridge the unsuitable ground/substrate. This method was used on the other unstable locations as well. Because of the substrate variability, throughout trenching operations, Kleinfelder tested the native spoils, and depending on the results, they were used for back-fill of the trench and compacted, or were taken off-site for disposal.



Figure 2-18. Vault #4 installation

As trenching operations continued, groundwater was encountered in the trench at Station 36+00. A Baker tank was brought to the site on October 21, sampling was conducted and the water showed elevated diesel. In addition, during excavation, an existing 36-inch concrete storm drain pipe was punctured in three locations. Although the damaged pipe had increased the flow of groundwater, the flow was contained by dirt berms built along the side of the pipe and pumped to a Baker tank. The contractor completed the storm drain repairs compliant with the City of Rocklin requests. PG&E consulted with the RWQCB with regard to the stored water discharge requirements. The RWQCB NPDES group representatives visited the site and gave information that the project Low Threat Discharge Permit did not allow for direct discharge of the Baker tank water. PG&E decided that the most cost-effective way to deal with the water was to dispose of it at a sanitary facility. Evergreen was contracted to take the water off-site and removal occurred during mid-December 2005.

During the first week of November, the crew prepared for excavation of Vault #4 north of Midas Avenue (see Figure 2-18). Crews installed sediment fence around the nearby Wetland #1 area.

In late November, crews laid conduit on the south side of Drainage #30 through Railroad Avenue. The PG&E EI issued an internal non-compliance to Zayas for lack of maintenance of sediment controls. Wilson monitored and inspected Zayas' erosion control installation and maintenance. The City of Rocklin Inspector also had issue with the site erosion controls. Per the City of Rocklin requirements, project runoff is not permitted to enter the City of Rocklin water system.

In an effort to control runoff from the site, crews laid rock north and south of Farron Road and at the Tank Farm yard, and crews built a wash station for the equipment entering Pacific Street. Hay bales were also erected. To control project debris, a road sweeper was used along Railroad Avenue between Pine Street and Oak Street.

During December 2005, trenching continued south of Midas Avenue. At Pine Street and Railroad Avenue, a vac-truck was used to pothole for utilities. The crew uncovered an Unanticipated Discovery (UAD) on December 7. An old granite drain was found. The crew halted work around the area. The PG&E EI notified the CPUC and called a cultural expert from Far Western to investigate the site. It was found that the drain feature had been modified and that both ends had been tied into PVC pipe. Far Western submitted a report on December 9, with the determination that the find was insignificant and that the drain was determined not to be eligible for inclusion in the California Register of Historic places and thus no further resource management actions were recommended. The City of Rocklin Inspector was also contacted and notified of the discovery. The Rocklin Inspector gave information that similar drains have been encountered throughout the City and have been removed and replaced with plastic pipe.

In December 2005, crews installed Vault #1 at Station 0+00 (see Figure 2-19). Tie-ins to the bore were completed at Station 8+00.

In December, the onslaught of a series of storms began. Early on, erosion controls were installed/maintained at Seasonal Drainage #37, #5, #6, #30, and #36. All project erosion controls were inspected and were deemed satisfactory.

Large amounts of rain fell in late December and trenching crews were impacted, which delayed work. A very large storm event occurred over December 31 and January 1. Crews arrived on-site and dewatered from vaults into adjacent land devoid of resources using filter bags (see Figure 2-20). The persistent rains caused the need for erosion control repairs. Erosion control in the vicinity of Seasonal Drainage #30 was in serious disrepair and silt from the nearby spoils piles had entered the CDFG jurisdictional resource (see Figure 2-21). Erosion had occurred under the sediment fence which was installed at the bank line. Erosion had extended from that point and all the way down the bank of the drainage. A Project Memorandum was issued to PG&E to document the occurrence and the close proximity of the spoils piles to Seasonal Drainage #30, which at some points were placed 10 to 12 feet from the top of the bank. In addition, a dewatering hole had been dug less than 35 feet from the drainage and storm/surface and groundwaters from areas covering the entire underground segment were being deposited into the hole. On January 6, crews had made efforts to remedy the situation. Sediment fence was installed around some of the spoils piles closest to the drainage and sediment build-up at the existing sediment fence located at the bank line were removed. Sand bags were placed within and around eroded areas inside the bank of Drainage #30 to prevent



Figure 2-19. Vault #1 installation



Figure 2-20. Stormwater inundation at Vault #2 location

further erosion and hinder further sediment flow into the drainage. No equipment entered the drainage area and no earth moving occurred which was seasonally prohibited by the CDFG SAA; further repair was still needed, however. The CPUC EM notified RWQCB, Army Corps of Engineers, and CDFG of the occurrence.

Maintenance of erosion controls became an ongoing issue. The PG&E EI had to repeatedly request that crews maintain the erosion controls throughout the project, including the existing erosion controls at Seasonal Drainage #37, #5, #6, #12, and #30 which needed repair due the excessive and



Figure 2-21. Drainage #30 stored spoils and bank erosion

persistent wind and rain. Due to the repeated complaints by the PG&E EI, as well as the CPUC EM notifications and write-ups, Wilson contracted a third-party erosion control specialist to maintain erosion controls throughout the underground project.

In mid-January, crews further reinforced the Drainage #30 area with additional sediment fencing and sandbags. On January 12, Essex notified the CPUC EM that the spoils pile which had partially eroded into the drainage had been sampled and soil testing was conducted. Analysis showed elevated levels for metals. Essex additionally notified the Army Corps of Engineers and CDFG. The contaminated spoils were eventually removed and taken to an appropriate facility in late January. The other spoils piles adjacent to Drainage #30 had, however, continued to grow (see Figure 2-22). The City of Rocklin Inspector requested that the material be removed. Piles remained large through the end of January and into February. The City of Rocklin representative again toured the site on February 5 and stated that the piles posed a public safety hazard and should be removed immediately, and that a failure to remove the piles would result in a “Failure to Comply” notice. Crews completed removal of the spoils on February 15. At that time, Zayas commenced the trench line tie-in operations from Vault #4 to the area directly adjacent to the Drainage #30 bank. Crews used extreme caution and care, excavating slowly and hand-digging some portions. After the PVC conduit tie-in, thermal concrete and later top slurry were poured one foot at a time so as to not overwhelm the fragile bank (see Figure 2-23). No damage to the bank or drainage occurred. Topsoil was placed over the installation, compacted, and restored to original grade.

Due to the continuing rains throughout the winter and spring, a section of sediment fence installed to protect Drainage #30 was again undercut in late March 2006. This section was the same which had been impacted previously. The water flow cut parallel to the original erosion and caused additional damage to the bank. Wilson crews installed additional erosion control devices to repair the undercut section and attempted to direct water flow away from the location. The PG&E EI notified CDFG of the potential impacts. Additional repairs were made to Drainage #30 after April 15, when heavy equipment was allowed back in the area. The contractor carefully removed soil from the low section of the bank and placed it in the eroded area and compacted it. A seed mix was dispersed and jute netting was re-installed (see Figure 2-24). Straw bales were placed at the top of the bank.



Figure 2-22. Spoils piles adjacent to Drainage #30



Figure 2-23. Concrete pour adjacent to Drainage #30



Figure 2-24. Final repair of Drainage #30

In the beginning of 2006, Interstate Safety was subcontracted by Wilson to complete conduit installation. Stormwater intrusion of the trench continued to be a problem. Crews discharged stormwater overland through filter bags in areas devoid of resources.

In February, PVC was installed between Vault #4 and Transition Pole #9. In early March, Jensen PreCast crews were subcontracted to conduct work inside of the installed vaults. Crews first worked in Vaults #1 and #2 to correct problems related to the existing bolt pattern and equipment installation. Zayas also worked inside of the Vaults conducting dewatering as well as testing the installed PVC. Water intrusion continued to be a problem and a water detention basin was excavated at the staging area near the Kinder Morgan Tank farm, into which water was pumped (see Figure 2-25).

All conduit was installed by the end of March 2006. Crews continued proofing and running mandrels through the installed PVC as well as cleaning. Cable pulling and splicing occurred during April 2006 (see Figure 2-26). Zayas continued vault dewatering, and sediment-laden water runoff from project areas became a problem. Straw mulch was spread over exposed soil and a straw bale and filter fabric detention basin was constructed.



Figure 2-25. Detention pit used for dewatering



Figure 2-26. Transition Pole #10 and conduit stringing operations at Vault #1

In early April 2006, tie-in work occurred at Transition Poles #9 and #10. Cable work continued at Vaults #1 through #4. On April 6, the CPUC EM notified crews that sediment was breaching the installed erosion controls around Wetland #2 (see Figure 2-27). Crews spread straw, filter fabric was laid out, and additional hay bales were added which remedied the problem of sediment-laden water entering the sensitive area.



Figure 2-27. Sediment-laden runoff into Wetland #2

By early May 2006, crews finalized the cable-related activities. In May, the rainy season finally concluded and crews removed straw bales, straw wattles, silt fence and fabric on access roads. They also removed all trash, construction materials, equipment, and debris.

Crews restored grade, and de-compacted soils of disturbed ground as necessary outside of the graveled travel areas. Crews also restored the original grade of Wetland #2. They spread topsoil — keeping wetland and upland topsoil to respective locations.

From May 14 through May 20, 2006, the transmission line was tested and brought on-line/energized incrementally. A final walk-through occurred on May 25, 2006.

Bores

A single horizontal directional drill bore was needed to install the underground 60 kV transmission line under Sunset Boulevard. The Cherrington bore crew mobilized November 12, 2005. Visquene tarps were placed under the bore rig to catch potential leaks. Army Corps of Engineers permits allow for encroachment and take of project delineated Wetland #2. Affected area wetland topsoil was salvaged and stored on-site to be used during restoration activities. In addition, surrounding weeds were cleared. The crew had planned work from 7am to 7pm; however, the CPUC EM reminded PG&E that per mitigation measure requirements, boring may only occur from dawn to one half hour before dusk to assure site visibility in order to identify potential frac-outs.

The PG&E EI held a tailgate meeting outlining allowable work hours and conditions of the Frac-out Contingency Plan. Boring operations commenced November 18, 2005 (see Figure 2-28). A continual frac-out occurred into Wetland #2. The frac-out was isolated with hay bales, a vac-truck arrived at the site, and the bentonite was removed from the wetland area (see Figure 2-29). On November 19, a second frac-out occurred 100 feet off the centerline into Wetland #3. The drilling mud rose to the surface and was immediately removed. Impacts to Wetland #3 were not covered by the Army Corps permits. Per Essex, both the Army Corps of Engineers and the CDFG were notified of the frac-outs into the resource areas. A retroactive permit was obtained from the Army Corps of Engineers concerning Wetland #3. Essex also filed an incident report.



Figure 2-28. Bore rig at the entrance pit south of Sunset Boulevard



Figure 2-29. Frac-out into Wetland #2

The bore forward rheem was completed on December 2, 2005. A small frac-out occurred December 2, 2005 within Seasonal Drainage #5. The mud was contained and vacuumed out. The Army Corps of Engineers was notified of the frac-out. A parallel receiving pit was dug to relieve the pressure.

Bore operations were completed December 10, 2005. Cherrington completed the pullback of the HTDP pipe (see Figure 2-30). Conduit was bundled and pulled back through the pipe. The tailings and receiving pits were cleaned and bentonite was removed from the site. The crew de-mobilized from the site on December 14, 2005. At the end of the project, the wetland topsoils were replaced and the area was reclaimed and re-seeded.

In preparation for tie-ins to the bore segment, on January 5, the CPUC EM found that Zayas (not the bore contactor) was pumping infiltrated water from the installed HDPE pipe and dewatering into Wetland #2 without proper testing. The violation was noted in a Project Memorandum issued January 6. Notifications to the Army Corps of Engineers were required. A Baker tank was subsequently brought to the site for dewatering.

Tie-ins to the bore occurred mid-February 2006, which again required encroachment into Wetland #2 (see Figure 2-31). Dewatering into Baker tanks located on-site was necessary



Figure 2-30. Bore exit pit



Figure 2-31. Wetland #2, which lies adjacent to the project work area

2.2.3 Atlantic and Del Mar Substation Modifications

PG&E did the substation modifications since the yards were active substations and were energized or “hot.” Direct monitoring was difficult due to access constraints. The substation work required minimal monitoring, because all work occurred on paved or gravel areas devoid of nearby resources.

A new 60 kV breaker and bay was installed within the fenced area at the existing Atlantic Substation. The new line was placed on three new double-circuit poles within the Atlantic Substation property, along with the existing 60 kV circuit, and routed toward the Del Mar Substation. New 60 kV bays were added to the end of the 60 kV bus.

In order to permit a possible future voltage upgrade, the clearances and equipment at the substations were rated 115 kV, although the operating voltage is proposed to remain 60 kV. New equipment and clearances would also be rated 115 kV.

2.2.4 Restoration and Revegetation Highlights

In May 2006, restoration and revegetation efforts were completed per the Upland and Wetland Mitigation Restoration and Revegetation Plan requirements.

A mechanical ripper de-compacted areas and hydro-seeding occurred. Crews restored original grade including that of Wetland #2. Crews spread topsoil — keeping wetland and upland topsoil to respective locations. Crews seeded all disturbed ground, except graveled access roads. Crews mulched all seeded areas with a weed-free straw at an approximate rate of 2 tons per acre to achieve approximately a 70 percent cover, and crimped straw by use of a mechanical crimper (see Figure 2-32).

Repairs were made to Drainage #30 (after April 15 heavy equipment was allowed back in the area.) The contractor carefully removed soil from the low section of the bank and placed it in the eroded area and then compacted it. A seed mix was dispersed and jute netting was re-installed. Straw bales were placed at the top of the bank.

A final walk-through occurred on May 25, 2006. Outstanding follow-up items are covered in Chapter 3.



Figure 2-32. Restored area along the underground alignment

2.3 Non-Compliance Events During 60 kV Transmission Line Construction and Substation Modifications

2.3.1 Non-Compliance Reports and Project Memoranda

During the course of the project one NCR and two Project Memoranda were issued. Non-compliance issues are summarized in Table 2-2.

On June 22, the PG&E EI/biologist gave information that 22 large trees had been removed along the overhead segment by a PG&E contractor (the trees were slated for removal as part of the project plans and was required for conductor cable clearance). He stated that he had not been notified of the work due to a miscommunication by PG&E project management and thus he did not conduct pre-removal surveys or monitor the work. The project Mitigation Measure B-3 states that “All tree removal activities shall occur between November 1 and February 15 to avoid avian breeding seasons All trees within 250 feet of any construction shall be surveyed for active nests. If active raptor nests are found within 250 feet of tree removal . . . a construction-free buffer of at least 250 feet around the nest shall be maintained.” The CPUC EM issued an NCR noting the out of season removals and lack of crew training, surveys and monitoring. The NCR also listed corrective measures which required that biological surveys be conducted immediately at all of the removal sites and site access areas, and that results be submitted to the CPUC and CDFG.

On January 6, 2006 a Project Memorandum was issued because large spoils piles were being stored in close proximity to Seasonal Drainage #30 without adequate erosion control measures, which was a violation of Applicant Proposed Measure 7-2. The erosion control along the drainage was in disrepair, which led to silt from the spoils piles being emptied into the CDFG drainage. Siltation entering the drainage is a violation of Condition #2 of the CDFG SAA. Because notification had not been made, the CPUC EM notified CDFG of the occurrence.

On January 5, the CPUC EM found that Zayas crews were pumping infiltrated water from the installed HDPE pipe and dewatering into Wetland #2 without proper testing (see Figure 2-33). The violation was noted in a Project Memorandum issued January 6. Notifications to the Army Corps of Engineers had not been made and were required by the Memorandum.

Table 2-2. Project Memoranda and Non-Compliance Reports Issued for the 60 kV Transmission Line Construction and Substation Modifications

Non-Compliance Type	Date	Description
NCR (Level 2)	6-23-05	PG&E contractors removed 22 large trees without notifying the project EI and without conducting avian nest surveys prior to removal, which is a violation of Mitigation Measure B-3 and APM 7-6. Additionally, the trees were removed outside of the allowable window of November 1 through February 15 as established in Mitigation Measure B-3 and overland travel was used instead of existing access roads.
Project Memo	1-6-06	PG&E contractors mechanically pumped the water from the casing of the underground conduit into Wetland #1 through a filter bag without adequate testing. Wetland #1 is under the Army Corps of Engineers' jurisdiction.
Project Memo	1-6-06	Large spoils piles were being stored in close proximity to Seasonal Drainage #30 without adequate erosion control measures, which is a violation of APM 7-2. The erosion control along the drainage was in disrepair, which led to silt from the spoils piles being emptied into the CDFG drainage. Siltation entering the drainage is a violation of Condition #2 of the CDFG Streambed Alteration Agreement.

Although not requiring specific write-ups, some compliance issues were prevalent and ongoing. The CPUC EM had to repeatedly remind and follow up on the installation and maintenance of project sediment controls. At the beginning of the project the hay bales and sediment fencing were not initially installed around protected vernal pool areas as required by the USFWS, until the CPUC EM reminded the PG&E EI and then had to follow up with the requirements. The CPUC EM had to remind the PG&E EI to conduct and report on required wildlife surveys including bird surveys and CTS surveys prior to work in specified areas. It also took repeated reminding of PG&E to provide notifications of issues related to jurisdictional resource areas to the CPUC and applicable agency representatives.



Figure 2-33. Dewatering the bore pipe into Wetland #2

2.4 Variances Requested for the 230 kV Transmission Line Construction and Substation Modifications

A total of five variances were requested from PG&E for the project construction for additional ancillary sites, slight changes to types of equipment allowed near specific resource areas, including discretionary refueling, as well as changes to allowable tree removal time frames. Variances requested for the 60 kV transmission line are summarized in Table 2-3.

Table 2-3. Variances Requested for the 60 kV Transmission Line and Substation Modifications

Variance Request No.	Date Submitted	Description	Status	CPUC Approval Date
1	4-19-05	Modify the implementation of Applicant Proposed Measure 7.2 at Wetlands #2 and #30 to allow the use of non-rubber-tired vehicles and to allow discretionary refueling on the project right-of-way.	Approved	5-2-05
2	5-19-05	Allow overland travel from an existing access road to the Pole 3/19 site.	Approved	5-25-05
3	6-28-05	Allow specific tree removals outside of the allowable window of November 1 to February 15 as outlined in Mitigation Measure B-3.	Approved	7-7-05
4	6-28-05	Allow movement of track and rubber tired equipment through approximately 15 feet by 100 feet of Cultural Resource site Y2.	Approved	7-7-05
5	9-2-05	Remove either a berm or oak tree to open up space needed for boring operations south of Sunset Ave. Use of an existing disturbed staging area. String and pull conduit through a delineated wetland area.	Approved	9-8-05

Two of the five Variance Requests submitted for the project were for extra workspace needs. One of the sites was needed for access to a tower site. Another site was utilized for bore construction.

Two of the five Variance Requests were for allowance of track and rubber tire equipment near resource areas. One variance allowed track and rubber tire equipment near Wetland #2 and Drainage #30 (work is allowed in these areas under the project CDFG Streambed Alteration Agreement and Army Corps of Engineers Nationwide Permits). Another variance allowed movement of track and rubber-tired equipment through 15 feet to 100 feet of cultural resource site CA-Y2. Both the PG&E and CPUC cultural resource specialists agreed that the likely resource impacts would be non-significant.

The last Variance Request allowed tree removals outside of the November 1 through February 15 window (non-bird nesting season). Additional surveys and monitoring were required as part of the variance approval.

2.5 Summary of the 60 kV Transmission Line and Substation Modification Activities

A total of two NTPs for construction were issued by CPUC for the 60 kV transmission line. Construction began in April 2005, after the approval was granted for crews to work in the UPRR right-of-way and issuance of the CPUC NTP. Construction was conducted from April 2005 to May 2006, and involved the installation/stringing of 4 miles of overhead structures, 1.3 miles of underground circuit, as well as modifications to the Atlantic and Del Mar Substations to accommodate the new line.

As presented in Table 2-2, compliance issues on the 60 kV line were mostly related to erosion control installation and maintenance failures as well as a lack of appropriate notifications to project personnel and to agency representatives concerning resource issues.

As presented in Table 2-3, a total of five variances were requested from PG&E for the project construction for additional ancillary sites, slight changes to types of equipment allowed near specific resource areas, including discretionary refueling, as well as changes to allowable tree removal time frames.

2.6 Final Inspection of the 230 kV Transmission Line and Substation Modifications

The CPUC EM conducted the final inspection of the 230 kV transmission line on May 25, 2006. Clean-up and restoration efforts were observed to be mostly complete with a minor outstanding punch list of items discussed in Chapter 3. Project flagging and signage was removed from the right-of-way, access roads, and ancillary sites. Landscaping around disturbed areas appeared to be complete. Chapter 3 presents the post-construction compliance requirements for the PG&E ADM Project.

3.0 Post-Construction Requirements

The Mitigated Negative Declaration and issued permits defined the pre-construction, construction and post-construction requirements for the ADM Project. Pre-construction compliance was conducted as part of the Notice to Proceed process (see Section 1.3). The construction progress was monitored as discussed in Chapter 2. Chapter 3 presents the post-construction requirements as follows:

The CPUC EM observed the initial restoration activities to be in compliance with mitigation measures adopted in the MND and the Atlantic–Del Mar Reinforcement Project Upland and Wetland Mitigation, Restoration, and Revegetation Plan.

Most of the construction sites within the overhead portion of the project have been successfully revegetated. However, a few areas were identified as needing follow-up restoration during the final walk-through (see below). Ideally, restoration should be conducted in the fall of 2006 (September or October). The locations below are identified relative to the nearest pole number:

Pole #5 (located approximately 300 feet south of Americana Way in Rocklin): Approximately 10 feet of sloped bank adjacent to Pole #5 was excavated during construction to accommodate the tower footing. The excavation is located at the edge of a paved commercial yard, creating a vertical exposed edge below the grade of the paved lot. Over time, stormwater runoff from the yard could erode the bank and undercut the pavement. Due to the potential instability of this site, the bank requires stabilization. This could be accomplished by hydro-seeding the bank, replacing soil and then seeding to create a less steeply banked slope, or by another means determined by PG&E.

Access road near Poles #16-#17 (located near the end of Antelope Creek Drive in Roseville): On the access road located between Poles #16 and #17, two PG&E wooden poles and two straw wattles (that were used on the access road) need to be removed.

Pole #19 (located approximately 100 feet west of Antelope Creek and approximately 100 feet north of the Maya Archery Range): The work area near Pole #19 was only partially vegetated and will need additional restoration work, including soil de-compaction, seeding with an upland seed mix, and stabilizing with straw mulch. Since this area is approximately 100 feet west of Antelope Creek, a waterbar should be installed on the slope of the work area to divert any sediment-laden stormwater runoff onto the adjacent, stable grass slope.

Poles #23 and #25 (located on the PG&E property next to the Atlantic Substation): Both of these pole sites have little to no vegetation in the work area. In both locations, the soil should be de-compacted, seeded with an upland seed mix, and stabilized with straw mulch.

4.0 Conclusions and Recommendations

The intent of Section 4.0 is to identify the shortcomings of mitigation and permit requirements approved for the ADM Project and recommend solutions to these shortcomings for future projects.

- **Agency Coordination.** There were repeated problems on the part of PG&E and their environmental representatives in coordination with applicable resource agencies when sensitive resource sightings and potential impacts were made. It was only after CPUC prodding and direct notification of the applicable resource agencies by the CPUC EM that consultation occurred. It is recommended that the mitigation measures regarding resources, both cultural and biological, be clarified to require agency consultation “immediately” if there are resource questions or uncertainties, and until such consultation is conducted, no work shall occur in the area.
- **Installation and Maintenance of Erosion Controls.** Repeated problems occurred with installation and maintenance of erosion controls. The CPUC EM had to repeatedly remind the PG&E EI and crews of the project requirements and permit conditions which outlined the proper erosion control procedures. It is recommended that the mitigation measures include stringent stipulations regarding erosion controls and Storm Water Pollution Prevention Plan (SWPPP) protocols. All erosion controls should be installed prior to work in applicable areas, and if maintenance needs are identified, work in the area shall be halted and shall not re-start until repairs are made.