Proceeding No.: A.15-09-___
Exhibit No.: SDG&E-08
Witness: Akau

PREPARED DIRECT TESTIMONY OF

DON AKAU

ON BEHALF OF

SAN DIEGO GAS & ELECTRIC COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

SEPTEMBER 25, 2015

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PREPARED DIRECT TESTIMONY OF DON AKAU

ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Don Akau. My business address is 8315 Century Park, San Diego, CA 92123.

Q. What is your current position?

A. I am the Vegetation Program Manager at San Diego Gas & Electric Company ("SDG&E"). My qualifications are attached as Appendix 1.

Q. What are your responsibilities as Vegetation Program Manager?

A. I am responsible for developing, implementing, and managing SDG&E's Vegetation Management Program, overseeing pre-inspection, tree trimming, pole brushing, wood pole inspection, and quality assurance (audits), to ensure compliance with the various responsible regulatory agencies and applicable law. I have held this position since May 2007.

Q. Please describe your professional background.

A. I have been a Certified Arborist and Utility Specialist since 1995. I joined SDG&E's Vegetation Management department in 1999 as a Forester, and then I became Vegetation Program Manager in 2007. Prior to joining SDG&E, I was employed by Davey Tree for approximately 10 years, and my last position there was general foreman.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to describe SDG&E's Vegetation Management Program, including the extensive processes and procedures that were in place in October 2007 to ensure that SDG&E was providing safe and reliable service in compliance with applicable regulations.

I also discuss the activities of the Vegetation Management Program as they relate to the Rice Fire, which began on October 22, 2007 in Fallbrook, California. The California Department of Forestry and Fire Protection's ("Cal Fire") Investigation Report into the Rice Fire concluded that the ignition source for the fire was SDG&E conductors which broke and fell to the ground during the fire storm of 2007. The Commission's Consumer Safety and Protection Division (now the Safety and Enforcement Division) determined that a limb from a sycamore tree (Tree FF1090)[1] broke and fell onto SDG&E's 12 kV overhead conductors in high winds, which in turn caused the conductors to break and fall to the ground. I explain that SDG&E had inspected Tree FF1090 in accordance with its Vegetation Management Program, that the tree was in compliance with applicable regulations at the time of the Rice Fire, and that SDG&E had no knowledge or reason to believe that the tree posed a safety hazard.

Q. How is the remainder of your testimony organized?

A. In Section II, I describe SDG&E's Vegetation Management Program, applicable vegetation management regulations (including changes to those regulations since the 2007 wildfires), and the processes and procedures that SDG&E has developed in its Vegetation Management Program to ensure both that SDG&E is meeting its own standards and complying with regulations. I also note that SDG&E's Vegetation Management Program has been recognized for its quality. In Section III, I discuss the inspection activities related to Tree FF1090, as well as my own observations from visiting Tree FF1090 in the immediate aftermath of the Rice Fire, all of which leads me to conclude that SDG&E had complied with applicable regulations and its own policies pertaining to Tree FF1090.

Q. Have you previously prepared testimony in Commission proceedings?

[1] "FF1090" is SDG&E's internal Vegetation Management Program inventory designation for that particular sycamore tree.

A. Yes, I previously prepared testimony in the proceeding arising from the Commission's "Order Instituting Investigation, Notice of Hearing and Order to Show Cause" regarding the Witch and Rice Fires of October 2007.

II. SDG&E'S VEGETATION MANAGEMENT PROGRAM

Q. What is SDG&E's Vegetation Management Program?

A. In general, the Vegetation Management Program involves identifying, recording and managing an inventory or collection of trees and vegetation within SDG&E's service territory. The main purpose of this Program is to maintain safe and reliable operations in accordance with applicable statutes and regulations by ensuring that vegetation will not encroach on SDG&E's power lines or otherwise pose a safety hazard. As discussed further below, our Vegetation Management Program has been repeatedly recognized for its excellence.

Q. How many trees and poles are managed under the Vegetation Management Program?

A. SDG&E's service territory had during 2007 an inventory of approximately 400,000 trees (currently this inventory includes approximately 460,000 trees) in proximity to overhead transmission, distribution, and secondary voltages. Approximately 250,000 trees are trimmed under the program every year. There were, during 2007, approximately 35,000 wood poles that required "brushing" – *i.e.*, clearing vegetation and other materials around the base of the poles – to prevent pole equipment-related ignition sources. During 2007, there were also approximately 244,000 wood poles which we inspect and treated for pole integrity purposes.

Q. What are the statutory and regulatory requirements applicable to vegetation management activities by utilities in California?

A. The Commission's General Order 95, Rule 35 sets the general clearance requirements for vegetation around power lines. These clearances vary by voltage level (the higher the voltage,

the greater the required clearance) and have changed over time. Rule 35 also requires that where dead, rotten or diseased trees (or dead, rotten or diseased portions of otherwise healthy trees) overhang or are leaning towards power conductors, those trees or portions are to be removed. Prior to 2007, Table 1, Case 13 in Rule 35 set forth line clearances to be maintained between line conductors and vegetation. For distribution lines the required clearance was 18 inches.

The General Order 95, Rule 35 requirements apply in areas in which the local fire agency has the primary responsibility for fire suppression. In areas in which Cal Fire has primary fire suppression responsibility, the clearance requirements of Public Resource Code Section 4293 apply. Prior to the 2007 wildfires, the required clearance for distribution lines under the Public Resource Code was 4 feet.

Q. How have regulatory requirements changed since the 2007 wildfires?

A. Following the 2007 wildfires, the Commission issued an "Order Instituting Rulemaking to Revise and Clarify Commission Regulations Relating to the Safety of Electric Utility and Communications Infrastructure Provider Facilities" ("Fire Safety OIR") in November 2008 (R.08-11-005). The Fire Safety OIR was issued to adopt additional safety requirements covering a range of issues in the aftermath of the 2007 wildfires. With respect to vegetation management, SDG&E worked closely with the Commission in the Fire Safety OIR proceedings so that it could better understand current utility tree trim practices. SDG&E also advocated the adoption of greater minimum clearances.

As a result of those proceedings, in 2009, the Commission established "Extreme and Very High Fire Threat Zones" for Southern California, which it incorporated into various General Order 95 revisions.[2] In particular, the Commission established a new case in Table 1 of

[2] D.09-08-029 at 27-34.

GO 95, Rule 35 – Case 14 – which established a vegetation clearance requirement of 4 feet with respect to distribution conductors in "Extreme and Very High Fire Threat Zones."[3] The clearances set forth in Public Resource Code Section 4293 have remained unchanged.

Q. What steps does SDG&E's Vegetation Management Program take to ensure compliance with the applicable clearance regulations?

A. It has been our practice to substantially exceed General Order 95, Rule 35, and Public Resource Code Section 4293 requirements and achieve post-prune clearances of 10 feet or greater. This practice ensures compliance until the next required pruning by taking into account each tree's growth rate after pruning to avoid a non-compliant encroachment within 4 feet of any conductor before the next trim. As I discuss below, SDG&E's Vegetation Management Program contains several stages of inspections and audits, as well as detailed training, which are intended to identify and address vegetation that may pose a hazard to SDG&E facilities, whether due to clearance issues or defects.

Q. Who is involved in the Vegetation Management Program?

A. The Vegetation Management Program department has a staff of 16 individuals, which includes me, three Team Leads, one Audit Forester, three Area Foresters, two Pole Brush Contract Administrators, one Wood Pole Inspection Contract Administrator, two Systems Analysts, and three Help Desk Administrators. We use qualified contractors for inspections and trimming. Those contractors are supervised by some of our department members. Both prior to and since the 2007 fires, SDG&E has used two contractors – Davey Tree Surgery and Asplundh Tree Expert Company – for tree trimming and pole brushing work. The Tree Pruning Services Contract contracts for Davey Tree Surgery and Asplundh each require the supervision, including

[3] *Id.*

the General Foreman and Area Manager to be an ISA Certified Arborist® or to achieve certification within 18 months of starting work on SDG&E property.

Separately we use two different contractors – Davey Resources Group for inspections and Western Environmental Consultants, Inc. for the pre- and post-inspection audits. Davey Resources Group also maintains an internal audit process over its inspection work. Utilizing contracted crews has been very cost effective, as it allows SDG&E to employ a well-trained and qualified work force that can easily adjust resource needs during periods when the volume of work fluctuates. There are times when SDG&E has two hundred or more contractor employees conducting vegetation management activities simultaneously. This number of contract crews ensures all activities remain on schedule to complete within the annual schedule. These numbers can also drop as work is completed or less work is generated during the pre-inspection activities due to drought or other environmental factors that reduce tree growth and population. Additionally, a contracted work force can provide mutual aid support during storm or restoration events.

Q. How does SDG&E manage its inventory of trees and poles under the Vegetation Management Program?

A. SDG&E has developed and maintains a vegetation management work plan. Our plan has been essentially the same since 1998. This plan divides SDG&E's service territory into manageable areas known as Vegetation Management Areas of which there are 133. Our activities in each Vegetation Management Area are driven by a "Master Schedule." That schedule identifies specific activities, each with a projected start and finish date that must take place in each Vegetation Management Area every year. The activities include:

(1) Pre-inspection;

(2) Audit of pre-inspection work;

(3) Tree trimming and removal; and

(4) Post trim and brushing audits.

Under the Master Schedule, the pre-inspection, tree trimming and removal, and quality assurance audit activities are conducted in each Vegetation Management Area on an annual basis. Within an annual cycle, the pre-inspection is completed within 30 days; the quality assurance audit of the pre-inspection is completed within the first month following the pre-inspection; tree trimming and removal begins two months after the start of pre-inspection, and the contractor has 60 days to complete all assigned work and 5 additional days to certify completion; and the quality assurance audit of the tree trimming and removal is completed within 30 days from that completion and certification – a continuous cycle. A combination of scheduled vegetation management activities for all Vegetation Management Areas, including Vegetation Management Area 379 (Rainbow 1) covering the Fallbrook area, taken from the Vegetation Management Area Master Schedule in place in 2007 is attached hereto as Appendix 2. This appendix includes tree trimming and distribution pole brushing activities both for the 2006 and 2007 cycles for all Vegetation Management Areas.

The entire process is managed through our Vegetation Management System – a software system that we developed to store records of the Vegetation Management Program activities. The Vegetation Management Program work force uses this system to identify work and update work activities.

Q. What are the pre-inspection activities?

A. Pre-inspection is the first stage in the Vegetation Management Program. Each Vegetation Management Area is assigned to a contractor and the assigned contractor sends out a

pre-inspector to inspect and evaluate all the trees in proximity to SDG&E's power lines. During the pre-inspection, the contractor updates the information in our system based on the current condition of the trees in the field, and adds or removes trees from the inventory records as appropriate. The inspector evaluates all trees in close proximity to SDG&E conductors and records the condition of each tree, including: the species, height, growth rate, clearance from SDG&E facilities, location, and any visible structural defects or hazards. The inspector also notes which trees require trimming or removal work; and any other important information that pertains to property or customer. The pre-inspection contractor will also identify and record visible hazard conditions in trees, such as dead, diseased, or damaged branches, included bark, heavy leans and weighted branches, overhanging branches, and other conditions that should be abated to protect the overhead electrical facilities. The inspector is instructed to err on the side of caution. This has been the process since well before the 2007 fires.

Q. How are these inspectors trained to perform these activities?

A. Since 1998, the requirements relating to the pre-inspection processes and work flows, including the inspector's duties, roles and responsibilities and compliance with applicable regulations, have been detailed in SDG&E's Vegetation Management Program Tree Pre-Inspection Procedure manual provided to the contractor. The manual that was in place in October 2007 is attached hereto as Appendix 3. SDG&E's contracts require the contractor to train its pre-inspectors specifically on many topics detailed in the manual, including applicable rules and regulations related to utility vegetation management, including GO 95, Rule 35 and Sections 4292 and 4293 of the Public Resource Code; SDG&E's Vegetation Management System; and wildland fire behavior. Since 1998, SDG&E has also given contractors a field training exercise.

In order to ensure that post-trim clearance requirements are met, SDG&E requires Contractor training of employees in species growth rates, growth characteristics, use of proper pruning techniques, such as directional pruning or drop crotch pruning to encourage regrowth away from the conductors. This training also involves tree assessment and hazard assessment to make sure that contractors are able to identify visible hazard conditions in trees, such as dead, diseased, or damaged branches, included bark, heavy leans and weighted branches, overhanging branches, and other conditions that should be resolved to protect the overhead electrical facilities. Further, pre-inspectors are trained to anticipate and observe how weather conditions, including high winds, rain, and snow may cause a tree to pose a hazard to conductors in such conditions.

In addition, our inspection contract requires a Pre-Inspector to hold a Certification issued by the International Society of Arborist ("ISA"). Earning an ISA Certified Arborist® credential requires training in and knowledge of all aspects of arboriculture. ISA Certified Arborists® have met all requirements to be eligible for the exam, which includes three or more years of full-time, eligible, practical work experience in arboriculture or a degree in the field of arboriculture, horticulture, landscape architecture, or forestry from a regionally accredited educational institute. A code of ethics for ISA Certified Arborists® strengthens the credibility and reliability of the work force. This certification is accredited by the American National Standards Institute, as meeting and exceeding ISO 17024.[4]

Some of our Contractor's Pre-Inspectors are also certified as Certified Arborist Utility Specialists. An ISA Certified Arborist Utility Specialist™ has a minimum of 2000 hours

[4] ISO/IEC 17024 (2012, *Conformity assessment – General requirements for bodies operating certification of persons*), provides a global benchmark for personnel certification programs to ensure that they operate in a consistent, comparable and reliable manner worldwide, thereby allowing individuals to have skills that translate across national lines.

experience over two years in electric utility vegetation management or has served as a consultant to a utility, with a minimum of 4,000 hours over a maximum 10-year period. This specialist position also requires experience in utility vegetation management and passage of testing on topics such as electric utility pruning, program management, integrated vegetation management, electrical knowledge, customer relations, and storm response.

Q. What happens after the pre-inspection activities?

A. The next step is a quality assurance audit of pre-inspection activities to verify the quality and accuracy of the inspection activities and tree listings prior to initiating a tree trim work order. The contractor performs its own audits, but since 2003 SDG&E also used a separate contractor to audit the pre-inspection work. Based on a field inspection, the independent auditor randomly samples at least 10 percent of the pre-inspection work to validate the completeness and accuracy of the data the pre-inspector reported to SDG&E. The results are then reviewed with SDG&E. Once the audit is finalized, the trimming work is then assigned to the tree contractor. This has been the process since before the 2007 fires.

Q. What training did the auditors receive prior to the 2007 wildfires?

A. The auditors training, roles, and responsibilities have today not changed much from what was in place prior to the 2007 wildfires. The audit contractor is required to train its auditors on the same topics as the pre-inspectors. In addition, since the 2007 wildfires, the auditor training now incorporates an annual refresher on hazard tree assessment for all audit crews.

Q. Please describe the tree trimming and removal activities?

A. Since 1998, work has begun with a work order to the contractors that identifies all trees to be trimmed or removed. The contractor then assigns the work to its crews who complete the pruning and or removal activity. The tree crews determine what pruning or removal is required

to achieve the required clearances to maintain annual compliance. In the event that the tree crew observes a visible structural branch defect while in the tree that was not visible to the pre-inspector from the ground and that requires additional work, the crew will abate the hazard and notify the general foreman. Once work is completed, the tree crew updates the tree information and records the work performed in SDG&E's system. Once all work orders for the Vegetation Management Area tree-trimming work is completed and closed by the contractor, the contractor notifies SDG&E.

Q. What training do the workers who performed trimming and removal receive?

A. The contractor provides tree worker safety, tree pruning and removal training, and equipment training through their respective contract management team. The contractor staff managers and safety representatives provide the worker training. The training is well documented to show the performance of the crew member. Each crew member receives a training manual and is given field exercise to show they can perform the exercise safely and accurately. Over a period of 18 months the worker will undergo regular documented training to become a "Qualified Utility Line Clearance worker." This training is designed to comply with the Occupational Safety and Health Association and tree-industry safety standards. This training process has been in place since before the 2007 fires.

Q. What happens after the tree trimming and removal activities?

A. After the trees are trimmed, the audit contractor performs quality assurance audits of the tree trimming and removal activities. This audit validates that work activities have been completed. The auditor assesses in the field a random sample of 10 percent or more of the trees trimmed and removed to, among other things, "second check" all the overhead power lines in the Vegetation Management Area for any trees that may not remain in compliance with applicable

regulatory requirements until the next trim cycle. The results are then reviewed with SDG&E and the contractor to determine any additional work required.

Q. Prior to the 2007 wildfires, what happened if anyone at SDG&E or one of SDG&E's contractors determined that a tree posed an immediate threat or was non-compliant with clearance requirements?

A. When a tree is considered a hazard, meaning that it poses a threat that will not hold until the scheduled trim date or is found to be out of compliance with clearance requirements, the tree is pruned on a priority basis, sooner than it would be under the Master Schedule. Such trees are generally pruned the same day, within 24-48 hours, or within a few weeks, depending on the severity of the hazard, as determined by the person evaluating the tree.

Q. Was the Vegetation Management Program that you just described in place in October 2007, at the time of the Rice Fire?

A. Yes, it was. As I have testified earlier, the Vegetation Management Program is largely the same as it existed back in 1998. While there have been some changes to regulatory requirements since the 2007 wildfires – which I noted above – all of the principal features that I just described, from the activities to the schedule, were in place prior to and during 2007.

Q. Did SDG&E implement any changes to its Vegetation Management Program following the 2007 wildfires?

A. Yes. SDG&E developed and implemented an off-cycle patrol (*i.e.*, a patrol that is outside the schedule described above) of High Risk Fire Areas within the rural areas of SDG&E's service territory. The patrols, which occur each year prior to September 1, revisit and evaluate trees inspected earlier in the year in the High Risk Fire Areas for any changes in the health or site condition. In particular, the patrols look for dead, diseased and declining trees, as well as trees

that have experienced unexpected growth or re-growth, landscape changes, and other environmental conditions such that they could potentially fail to maintain the required clearances through the fire season. These patrols have helped identify trees that have succumbed to the ongoing drought and beetle infestation.

Q. How would you describe the quality of SDG&E's Vegetation Management Program both prior to and since the 2007 wildfires?

A. The quality has been and continues to be very high. As I previously noted, we have approximately 460,000 trees in our inventory. We trim a great many of these trees each year (in 2014, we trimmed 236,952 trees), while also focusing annually on removing 8,000 to 10,000 fast-growing trees that are beneath or in close proximity to SDG&E power lines each year to avoid potential problems.

But we have and continue to track our success not just in the number of trees we trim or remove but also in how successful we have been in reducing tree-caused outages. Tree caused outages typically result from momentary tree-line contact. From SDG&E's perspective, low tree-caused outage numbers confirm that our Vegetation Management Program is working very well and keeping the system safe. As shown in Table 1 below, since its inception in 1998, our program has dramatically reduced tree-caused outages. In the recent past, we have been able to limit tree-related outages to just a few dozen a year, an impressive number when compared to the 400,000 plus trees in our inventory. Nonetheless, every tree-caused outage is investigated by an SDG&E Area Forester, who determines the root cause of the event and monitors trends regarding tree types or locations in which failures are likely to recur.

Table 1 – Historical Tree-Caused Outages

Year	Tree related Primary outages
1995	441
1996	492
1997	446
1998	280
1999	58
2000	63
2001	79
2002	99
2003	108
2004	111
2005	70
2006	64
2007	61
2008	82
2009	63
2010	111
2011	31
2012	32
2013	25
2014	54
2015	YTD June = 12

Q. Has SDG&E's Vegetation Management Program been recognized as an example of excellence?

A. Yes. In its "Transmission Operator Reliability Readiness Audit Report for SDG&E," dated August 14-17, 2006 ("Audit Report"), the North American Electric Reliability Council ("NERC") designated SDG&E's Vegetation Management Program as a "potential example of

excellence," noting that "SDG[&]E has a very extensive, detailed, and complete vegetation management program."[5] *See* Appendix 4.

Since 2000, Cal Fire has recognized SDG&E's success in maintaining compliance with Public Resource Code Sections 4292 and 4293. For example, in September 2007, Cal Fire and SDG&E conducted a joint inspection of SDG&E's vegetation management and pole brushing activities. During the three-day inspection of SDG&E facilities in the northern area of San Diego County (where the Rice Fire area is located), only two potential Public Resource Code Section 4293 infractions were noted in connection with the inspection of 1600 poles, a near perfect compliance rate. *See* Appendix 5. All noted issues were abated by October 11, 2007. Cal Fire stated that "Overall, SDG&E has done an outstanding job of trimming the vegetation from the power conductors and brushing around the poles."[6]

In addition, the Arbor Day Foundation has recognized SDG&E's Vegetation Management Program for its continued commitment each year since 2001 through 2014. The requirements for becoming and retaining this award include five core standards:

(1) Quality Tree Care – Industry standards for pruning, planting, removals, trenching, and tunneling near trees are consistently followed;

(2) Annual Worker Training – utility employees and contract workers are trained at least annually in best practices;

(3) Tree Planting and Public Education – Tree planting and public education programs are available to the public and paying customers, demonstrating proper

[5] Audit Report at 3, 25. It is my understanding that the Audit Report deemed the Vegetation Management Program a "potential" example of excellence because the applicable NERC Reliability Standard (FAC-003) did not become mandatory and enforceable until the following year (2007).

[6] Inspection Report at 3.

tree planting, placement, and pruning while expanding the tree canopy in the community;

(4) Tree-Based Energy Conservation Program – A formal tree-based energy conservation program is in place, putting special consideration on the value of trees in conserving energy; and

(5) Arbor Day Celebration – Sponsorship of or participation in annual Arbor Day events at the community level are documented, including collaboration with community groups whenever possible.

III. SDG&E'S INSPECTION AND COMPLIANCE ACTIVITIES RELATED TO THE RICE FIRE

Q. Are you aware of SDG&E's identifier for the tree implicated in the Rice Fire?

A. Yes, it's Tree FF1090.

Q. What clearances were required at the time of the 2007 Wildfires at the site of the Rice Fire?

A. As discussed above, in 2007, General Order 95 required a radial clearance of 18 inches, and Public Resource Code Section 4293 required a radial clearance 4 feet, between vegetation and 12 kV conductors, such as the power conductors at issue in the Rice Fire. Since 1997, SDG&E's practice has been to apply the stricter, 4 feet clearance standard. In the SDG&E Contract Scope of Work, SDG&E requires a minimum of 10 feet of clearance to be achieved at the time of post-prune, which takes into consideration re-growth and other environmental considerations.

Q. Have you reviewed SDG&E's Vegetation Management Program records regarding Tree FF1090?

A. Yes, I have.

Q. Do you believe that SDG&E was in compliance with its own policies and procedures, as reflected in the Vegetation Management Program you described above, with respect to Tree FF1090 on October 22, 2007?

A. Yes. I have reviewed SDG&E's and contractor's vegetation management records involving inspection and pruning activities on Tree FF1090 from May 1, 2000 to October 22, 2007. These records show that the tree was inspected every year and pruned nearly every year, and was always in compliance. As shown in the Vegetation Management System Tree History Report for Tree FF1090, attached hereto as Appendix 6, the inspection contractor (Davey Resource Group) recorded in July 2007 a clearance of 6 to 7.9 feet for Tree FF1090, which was well beyond the required 4 feet of clearance. As shown in the Tree FF1090 History Report, previous inspections also showed greater than 4 feet of clearance (8 to 9.9 feet in 2006; 8 to 12 feet in 2005). In addition, the records reflect that the Tree FF1090 had never been flagged as a hazard tree. There is no indication that either SDG&E or its contractor had ever seen any reason to expedite trimming of Tree FF1090 or to take any other actions outside routine vegetation management activities due to safety or other concerns.

Q. Was there any information about the clearance between FF1090 and the closest SDG&E conductor immediately before the fire?

A. Yes. Our contractor inspected the tree on October 15, 2007. Davey Tree Surgery has confirmed that General Foreman Jorge Orellana observed that the tree was compliant as of October 15, 2007. *See* Appendix 7.

Q. Based on the foregoing information, what do you conclude about SDG&E's compliance with its Vegetation Management Program, and applicable regulatory requirements, in relation to Tree FF1090?

A. Based on all of the information that I have reviewed, I conclude that SDG&E had applied its rigorous Vegetation Management Program to Tree FF1090, Tree FF1090 exceeded the applicable clearance requirements, and SDG&E had no reason to know that branch from that tree would come into contact with its conductors.

Q. Did you visit the origin of the Rice Fire in October 2007?

A. Yes. I first visited the site on the morning of October 22, 2007, after receiving a call from SDG&E's Fire Coordinator. I was told there was a large fire near our facilities.

Q. What did you see when you arrived?

A. I surveyed the area and located the downed SDG&E conductors. Some of the wires remained in the tree canopy, and one was on the ground.

Q. What observations did you make of Tree FF1090 at that time?

A. I observed that Tree FF1090, located east of the downed SDG&E conductors, had a large branch that had broken (but was still attached in the upper canopy) and laid across the SDG&E conductors into an adjacent Oak tree. This tree branch had severed the SDG&E power lines. Based on where the break-out occurred and the angle of the branch union, it appeared to me that the sycamore limb that had broken out was originally positioned towards the northeast, growing away from the power lines.

Q. What is the significance of your observation that the limb was positioned towards the northeast, growing away from the power lines?

A. That means it was not a limb that would have been subject to trim. It would not have presented a clearance issue during an inspection.

Q. Did you notice anything else about the tree?

A. Yes. Following the fire, the tree was trimmed to make it safe. Once on the ground, I noticed that the wood in the break out section showed signs of staining internally in the union between the branch meets the trunk. This staining could be an indicator of included bark, or internal structural stressing and cracking in the branch union, typically caused when two or more branch unions grow closely together. It appeared to me that this hidden structural defect contributed to the failure of the limb in the extreme winds.

IV. CONCLUSION

Q. Does this conclude your direct testimony?

A. Yes, it does.

APPENDIX 1

STATEMENT OF QUALIFICATIONS OF DON AKAU

My name is Don Akau. I am the Vegetation Program Manager at San Diego Gas & Electric Company ("SDG&E"). I am responsible for developing, implementing, and managing SDG&E's Vegetation Management Program, overseeing pre-inspection, tree trimming, pole brushing, wood pole inspection, and quality assurance (audits), to ensure compliance with the various responsible regulatory agencies and applicable law. I have held this position since May 2007.

I have been a Certified Arborist and Utility Specialist since 1995. I joined SDG&E's Vegetation Management department in 1999 as a Forester, and then I became Vegetation Program Manager in 2007. Prior to joining SDG&E, I was employed by Davey Tree for approximately 10 years, and my last position there was general foreman.

I have previously prepared testimony submitted to the California Public Utilities Commission.

APPENDIX 2

Draft

Vegetation Management Activity Schedule
Cycle 10 (2007 - 2008)

VMA	Co	Name	C10 Estimated Trees	C9 Estimated Trees	C10 Pre-Inspect Start	C9 Pre-Inspection Start	C10 Pre-inspection Audit start	C9 Pre-Inspection Audit Start	C10 Tree Trim Start	C9 Tree Trim Start	C10 Notification Start	C10 Notification End	C10 Chemical Start	C10 Chemical End	C10 Mechanical Start	C10 Mechanical End	C10 Reclear Start	C10 Reclear End	C10 Compliance Audit Start	Estimated Brush Poles	Estimate Managed Poles
210	SW	Point Loma	3786	4515	10/01/07	10/01/06	11/06/07	11/08/06	12/01/07	12/01/06	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	0	0
212	SW	Mission Bay	3347	4069	12/01/07	12/01/06	01/07/08	01/09/07	02/01/08	02/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	1	2
215	SW	La Jolla	3093	4118	05/01/08	05/01/07	06/06/08	06/08/07	07/01/08	07/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	87	87
220	SW	Mission Valley	4763	5473	12/01/07	12/01/06	01/07/08	01/09/07	02/01/08	02/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	23	23
221	SW	Mira Mesa	4270	4969	06/01/08	06/01/07	07/07/08	07/10/07	08/01/08	08/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	43	45
302	NE	San Marcos	2788	4609	05/01/08	05/01/07	06/06/08	06/08/07	07/01/08	07/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	66	70
304	NE	Escondido North	2848	3512	02/01/08	02/01/07	03/06/08	03/08/07	04/01/08	04/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	61	73
305	NE	Escondido Central	3508	4227	02/01/08	02/01/07	03/06/08	03/08/07	04/01/08	04/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	12	13
306	NE	Escondido South	1921	2521	03/01/08	03/01/07	04/07/08	04/10/07	05/01/08	05/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	17	22
309	SW	Rancho Bernardo	1666	2489	03/01/08	03/01/07	04/07/08	04/10/07	05/01/08	05/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	95	99
310	SW	Poway North	2404	2841	05/01/08	05/01/07	06/06/08	06/08/07	07/01/08	07/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	71	71
311	SW	Poway South	3807	4745	04/01/08	04/01/07	05/06/08	05/08/07	06/01/08	06/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	142	143
312	NW	Fallbrook West 1	1456	2092	05/01/08	05/01/07	06/06/08	06/08/07	07/01/08	07/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	22	44
313	NW	Fallbrook West 2	2407	3077	05/01/08	05/01/07	06/06/08	06/08/07	07/01/08	07/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	12	15
314	NW	Fallbrook West 3	1786	2487	05/01/08	05/01/07	06/06/08	06/08/07	07/01/08	07/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	80	254
350	NE	Lk Hodges South	3250	3780	12/01/07	12/01/06	01/07/08	01/09/07	02/01/08	02/01/07	10/22/07	11/02/07	11/12/07	01/11/08	02/11/08	04/11/08	06/16/08	08/15/08	08/18/08	208	346
351	NE	Lk Hodges North	2789	3150	12/01/07	12/01/06	01/07/08	01/09/07	02/01/08	02/01/07	10/22/07	11/02/07	11/12/07	01/11/08	02/11/08	04/11/08	06/16/08	08/15/08	08/18/08	362	444
352	SE	San Pasqual	4276	5666	06/01/08	06/01/07	07/07/08	07/10/07	08/01/08	08/01/07	11/26/07	12/07/07	12/17/07	02/15/08	03/10/08	05/09/08	06/30/08	08/29/08	09/01/08	229	333
353	SW	Highland Valley	4853	5475	04/01/08	04/01/07	05/06/08	05/08/07	06/01/08	06/01/07	11/26/07	12/07/07	12/17/07	02/15/08	03/10/08	05/09/08	06/30/08	08/29/08	09/01/08	594	725
354	SE	Ramona South 1	2519	2913	04/01/08	04/01/07	05/06/08	05/08/07	06/01/08	06/01/07	11/26/07	12/07/07	12/17/07	02/15/08	03/31/08	05/30/08	07/14/08	09/12/08	09/15/08	463	500
355	SE	Ramona East 1	1515	1846	03/01/08	03/01/07	04/07/08	04/10/07	05/01/08	05/01/07	11/26/07	12/07/07	12/17/07	02/15/08	03/31/08	05/30/08	07/14/08	09/12/08	09/15/08	472	487
356	SE	Ramona North	2725	3595	05/01/08	05/01/07	06/06/08	06/08/07	07/01/08	07/01/07	11/26/07	12/07/07	12/17/07	02/15/08	03/31/08	05/30/08	07/14/08	09/12/08	09/15/08	641	724
357	NE	Lake Wohlford	3826	4596	10/01/07	10/01/06	11/06/07	11/08/06	12/01/07	12/01/06	11/26/07	12/07/07	12/17/07	02/15/08	02/11/08	04/11/08	06/16/08	08/15/08	08/18/08	638	705
358	NE	Vly Center East 1	2228	2561	11/01/07	11/01/06	12/06/07	12/08/06	01/01/08	01/01/07	11/26/07	12/07/07	12/17/07	02/15/08	03/10/08	05/09/08	06/30/08	08/29/08	09/01/08	445	525
359	NE	Vly Center West 1	2191	3489	04/01/08	04/01/07	05/06/08	05/08/07	06/01/08	06/01/07	11/26/07	12/07/07	12/17/07	02/15/08	03/10/08	05/09/08	06/30/08	08/29/08	09/01/08	320	411
360	NE	Pauma Valley 1	3709	4176	07/01/07	08/01/06	08/06/07	09/08/06	09/01/07	10/01/06	11/26/07	12/07/07	12/17/07	02/15/08	03/10/08	05/09/08	06/30/08	08/29/08	09/01/08	403	476
361	NE	Pala	1428	1797	08/01/07	08/01/06	09/06/07	09/08/06	10/01/07	10/01/06	10/22/07	11/02/07	11/12/07	01/11/08	03/31/08	05/30/08	07/14/08	09/12/08	09/15/08	353	407
362	NE	Jesmond Dene	3511	4479	03/01/08	03/01/07	04/07/08	04/10/07	05/01/08	05/01/07	10/22/07	11/02/07	11/12/07	01/11/08	02/11/08	04/11/08	06/16/08	08/15/08	08/18/08	331	538
363	NE	Hidden Meadows	4567	5480	01/01/08	01/01/07	02/06/08	02/08/07	03/01/08	03/01/07	10/22/07	11/02/07	11/12/07	01/11/08	02/11/08	04/11/08	06/16/08	08/15/08	08/18/08	577	786
364	NE	Courser Canyon 1	2921	3465	08/01/07	08/01/06	09/06/07	09/08/06	10/01/07	10/01/06	11/26/07	12/07/07	12/17/07	02/15/08	02/11/08	04/11/08	06/16/08	08/15/08	08/18/08	257	338
365	SE	Ramona West	2800	3295	05/01/08	05/01/07	06/06/08	06/08/07	07/01/08	07/01/07	11/26/07	12/07/07	12/17/07	02/15/08	03/31/08	05/30/08	07/14/08	09/12/08	09/15/08	375	414
366	NE	Rincon	2140	2509	10/01/07	10/01/06	11/06/07	11/08/06	12/01/07	12/01/06	11/26/07	12/07/07	12/17/07	02/15/08	03/31/08	05/30/08	07/14/08	09/12/08	09/15/08	338	387
367	SE	Pine Hills 2	1702	1850	01/01/08	01/01/07	02/06/08	02/08/07	03/01/08	03/01/07	09/24/07	10/05/07	10/15/07	12/14/07	04/14/08	06/13/08	07/28/08	09/26/08	09/29/08	127	131
368	SE	Pine Hills 1	2713	2944	02/01/08	02/01/07	03/06/08	03/08/07	04/01/08	04/01/07	09/24/07	10/05/07	10/15/07	12/14/07	04/14/08	06/13/08	07/28/08	09/26/08	09/29/08	307	320
369	SE	Harrison Park	868	896	01/01/08	01/01/07	02/06/08	02/08/07	03/01/08	03/01/07	09/24/07	10/05/07	10/15/07	12/14/07	04/14/08	06/13/08	07/28/08	09/26/08	09/29/08	168	179
370	NE	Palomar Mtn 2	2425	2683	08/01/07	08/01/06	09/06/07	09/08/06	10/01/07	10/01/06	09/24/07	10/05/07	10/15/07	12/14/07	04/14/08	06/13/08	07/28/08	09/26/08	09/29/08	202	207
371	NE	Warner Springs	3631	4106	09/01/07	09/01/06	10/08/07	10/08/06	11/01/07	11/01/06	09/24/07	10/05/07	10/15/07	12/14/07	02/11/08	04/11/08	06/16/08	08/15/08	08/18/08	1009	1054
372	SE	Borrego	2040	2495	02/01/08	02/01/07	03/06/08	03/08/07	04/01/08	04/01/07	09/24/07	10/05/07	10/15/07	12/14/07	02/11/08	04/11/08	06/16/08	08/15/08	08/18/08	308	318
373	NE	Mesa Grande 2	982	1093	10/01/07	10/01/06	11/06/07	11/08/06	12/01/07	12/01/06	09/24/07	10/05/07	10/15/07	12/14/07	04/14/08	06/13/08	07/28/08	09/26/08	09/29/08	183	193
374	NE	Mesa Grande 1	2954	3196	09/01/07	09/01/06	10/08/07	10/08/06	11/01/07	11/01/06	09/24/07	10/05/07	10/15/07	12/14/07	04/14/08	06/13/08	07/28/08	09/26/08	09/29/08	231	241
375	NE	Palomar Mtn 1	2065	2579	08/01/07	08/01/06	09/06/07	09/08/06	10/01/07	10/01/06	09/24/07	10/05/07	10/15/07	12/14/07	04/14/08	06/13/08	07/28/08	09/26/08	09/29/08	151	167
376	NE	Lilac 1	1705	2325	06/01/08	06/01/07	07/07/08	07/10/07	08/01/08	08/01/07	10/22/07	11/02/07	11/12/07	01/11/08	03/31/08	05/30/08	07/14/08	09/12/08	09/15/08	265	337
377	SE	Whispering Pines 1	2172	2286	02/01/08	02/01/07	03/06/08	03/08/07	04/01/08	04/01/07	09/24/07	10/05/07	10/15/07	12/14/07	04/14/08	06/13/08	07/28/08	09/26/08	09/29/08	214	225
378	NE	Pala	1415	1559	07/01/07	07/01/06	08/06/07	08/08/06	09/01/07	09/01/06	11/26/07	12/07/07	12/17/07	02/15/08	02/11/08	04/11/08	06/16/08	08/15/08	08/18/08	259	329
379	NE	Rainbow 1	2378	2736	07/01/07	07/01/06	08/06/07	08/08/06	09/01/07	09/01/06	11/26/07	12/07/07	12/17/07	02/15/08	03/31/08	05/30/08	07/14/08	09/12/08	09/15/08	298	388
380	NW	Pala Mesa	3252	4177	04/01/08	04/01/07	05/06/08	05/08/07	06/01/08	06/01/07	10/22/07	11/02/07	11/12/07	01/11/08	03/31/08	05/30/08	07/14/08	09/12/08	09/15/08	388	579
381	NW	Winterwarm	3715	4468	06/01/08	06/01/07	07/07/08	07/10/07	08/01/08	08/01/07	10/22/07	11/02/07	11/12/07	01/11/08	04/14/08	06/13/08	07/28/08	09/26/08	09/29/08	461	703
382	NW	Gopher CyNEast 1	2386	3765	03/01/08	03/01/07	04/07/08	04/10/07	05/01/08	05/01/07	10/22/07	11/02/07	11/12/07	01/11/08	03/31/08	05/30/08	07/14/08	09/12/08	09/15/08	293	449
383	NW	Bonsall 1	1206	1545	03/01/08	03/01/07	04/07/08	04/10/07	05/01/08	05/01/07	09/24/07	10/05/07	10/15/07	12/14/07	04/14/08	06/13/08	07/28/08	09/26/08	09/29/08	183	309

Draft

Vegetation Management Activity Schedule
Cycle 10 (2007 - 2008)

VMA	Co	Name	C10 Estimated Trees	C9 Estimated Trees	C10 Pre-Inspect Start	C9 Pre-Inspection Start	C10 Pre-inspection Audit start	C9 Pre-Inspection Audit Start	C10 Tree Trim Start	C9 Tree Trim Start	C10 Notification Start	C10 Notification End	C10 Chemical Start	C10 Chemical End	C10 Mechanical Start	C10 Mechanical End	C10 Reclear Start	C10 Reclear End	C10 Compliance Audit Start	Estimated Brush Poles	Estimate Managed Poles
384	NW	Fallbrook East 1	3198	4401	04/01/08	04/01/07	05/06/08	05/08/07	06/01/08	06/01/07	10/22/07	11/02/07	11/12/07	01/11/08	03/31/08	05/30/08	07/14/08	09/12/08	09/15/08	410	543
385	NW	De Luz 1	1901	2323	06/01/08	06/01/07	07/07/08	07/10/07	08/01/08	08/01/07	10/22/07	11/02/07	11/12/07	01/11/08	04/14/08	06/13/08	07/28/08	09/26/08	09/29/08	204	244
386	NE	Santa Ysabel	3715	4084	09/01/07	09/01/06	10/08/07	10/08/06	11/01/07	11/01/06	09/24/07	10/05/07	10/15/07	12/14/07	04/14/08	06/13/08	07/28/08	09/26/08	09/29/08	428	448
387	NW	Gopher CyNEast 2	2466	3450	03/01/08	03/01/07	04/07/08	04/10/07	05/01/08	05/01/07	09/24/07	10/05/07	10/15/07	12/14/07	03/31/08	05/30/08	07/14/08	09/12/08	09/15/08	212	308
388	NE	Rainbow 2	1680	2131	07/01/07	07/01/06	08/06/07	08/08/06	09/01/07	09/01/06	11/26/07	12/07/07	12/17/07	02/15/08	02/11/08	04/11/08	06/16/08	08/15/08	08/18/08	330	380
389	NW	De Luz 2	2714	3058	06/01/08	06/01/07	07/07/08	07/10/07	08/01/08	08/01/07	10/22/07	11/02/07	11/12/07	01/11/08	04/14/08	06/13/08	07/28/08	09/26/08	09/29/08	293	353
390	NW	Fallbrook East 2	2605	3518	05/01/08	05/01/07	06/06/08	06/08/07	07/01/08	07/01/07	10/22/07	11/02/07	11/12/07	01/11/08	03/31/08	05/30/08	07/14/08	09/12/08	09/15/08	345	470
391	NE	Vly Center East 2	2857	3348	11/01/07	11/01/06	12/06/07	12/08/06	01/01/08	01/01/07	11/26/07	12/07/07	12/17/07	02/15/08	03/10/08	05/09/08	06/30/08	08/29/08	09/01/08	596	659
392	NE	Vly Center East 3	2964	3711	04/01/08	04/01/07	05/06/08	05/08/07	06/01/08	06/01/07	09/24/07	10/05/07	10/15/07	12/14/07	03/10/08	05/09/08	06/30/08	08/29/08	09/01/08	501	682
393	SE	Ramona South 2	1677	1953	03/01/08	03/01/07	04/07/08	04/10/07	05/01/08	05/01/07	11/26/07	12/07/07	12/17/07	02/15/08	03/31/08	05/30/08	07/14/08	09/12/08	09/15/08	317	381
394	SE	Ramona East 2	2663	3143	03/01/08	03/01/07	04/07/08	04/10/07	05/01/08	05/01/07	11/26/07	12/07/07	12/17/07	02/15/08	03/31/08	05/30/08	07/14/08	09/12/08	09/15/08	455	525
395	NE	Courser Canyon 2	1975	3156	06/01/08	06/01/07	07/07/08	07/10/07	08/01/08	08/01/07	11/26/07	12/07/07	12/17/07	02/15/08	02/11/08	04/11/08	06/16/08	08/15/08	08/18/08	223	274
396	NE	Lilac 2	1372	1930	06/01/08	06/01/07	07/07/08	07/10/07	08/01/08	08/01/07	10/22/07	11/02/07	11/12/07	01/11/08	03/31/08	05/30/08	07/14/08	09/12/08	09/15/08	164	222
397	SE	Whispering Pines 2	3072	3613	02/01/08	02/01/07	03/06/08	03/08/07	04/01/08	04/01/07	09/24/07	10/05/07	10/15/07	12/14/07	04/14/08	06/13/08	07/28/08	09/26/08	09/29/08	334	376
398	NE	Bonsall 2	1898	2266	02/01/08	02/01/07	03/06/08	03/08/07	04/01/08	04/01/07	09/24/07	10/05/07	10/15/07	12/14/07	04/14/08	06/13/08	07/28/08	09/26/08	09/29/08	247	380
399	NE	Vly Center West 2	3235	4340	05/01/08	05/01/07	06/06/08	06/08/07	07/01/08	07/01/07	11/26/07	12/07/07	12/17/07	02/15/08	03/10/08	05/09/08	06/30/08	08/29/08	09/01/08	567	660
400	SW	Allied Gd San Carlos	2246	2512	01/01/08	01/01/07	02/06/08	02/08/07	03/01/08	03/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	25	25
403	SW	Lem Grv-Sp Vly	2830	3111	02/01/08	02/01/07	03/06/08	03/08/07	04/01/08	04/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	13	13
405	SW	La Mesa West	3037	3550	11/01/07	11/01/06	12/06/07	12/08/06	01/01/08	01/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	0	0
406	SW	La Mesa East	3307	4139	06/01/08	06/01/07	07/07/08	07/10/07	08/01/08	08/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	1	1
408	SW	Mount Helix	2900	3383	02/01/08	02/01/07	03/06/08	03/08/07	04/01/08	04/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	0	0
410	SW	El CajoNWest	2671	3009	01/01/08	01/01/07	02/06/08	02/08/07	03/01/08	03/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	5	5
412	SW	Rancho San Diego	4416	5075	09/01/07	09/01/06	10/08/07	10/08/06	11/01/07	11/01/06	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	41	55
414	SW	El CajoNEast	2705	2991	09/01/07	09/01/06	10/08/07	10/08/06	11/01/07	11/01/06	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	0	0
416	SW	Santee	1700	1926	01/01/08	01/01/07	02/06/08	02/08/07	03/01/08	03/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	47	47
420	SE	Lakeside	4744	5334	11/01/07	11/01/06	12/06/07	12/08/06	01/01/08	01/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	44	44
450	SE	Blossom Valley 1	1465	1647	11/01/07	11/01/06	12/06/07	12/08/06	01/01/08	01/01/07	11/26/07	12/07/07	12/17/07	02/15/08	02/11/08	04/11/08	06/16/08	08/15/08	08/18/08	318	376
451	SW	Eucalyptus Hills 1	1572	1960	03/01/08	03/01/07	04/07/08	04/10/07	05/01/08	05/01/07	11/26/07	12/07/07	12/17/07	02/15/08	02/11/08	04/11/08	06/16/08	08/15/08	08/18/08	196	300
452	SE	San Vincente	1512	1849	11/01/07	11/01/06	12/06/07	12/08/06	01/01/08	01/01/07	11/26/07	12/07/07	12/17/07	02/15/08	02/11/08	04/11/08	06/16/08	08/15/08	08/18/08	328	393
453	SE	Barona	769	808	12/01/07	12/01/06	01/07/08	01/09/07	02/01/08	02/01/07	11/26/07	12/07/07	12/17/07	02/15/08	03/10/08	05/09/08	06/30/08	08/29/08	09/01/08	359	379
454	SE	Dehesa	3632	3986	12/01/07	12/01/06	01/07/08	01/09/07	02/01/08	02/01/07	10/22/07	11/02/07	11/12/07	01/11/08	03/10/08	05/09/08	06/30/08	08/29/08	09/01/08	1066	1243
455	SE	Crest	2065	2267	10/01/07	10/01/06	11/06/07	11/08/06	12/01/07	12/01/06	11/26/07	12/07/07	12/17/07	02/15/08	02/11/08	04/11/08	06/16/08	08/15/08	08/18/08	385	482
456	SE	Singing Hills	3765	4266	10/01/07	10/01/06	11/06/07	11/08/06	12/01/07	12/01/06	11/26/07	12/07/07	12/17/07	02/15/08	03/10/08	05/09/08	06/30/08	08/29/08	09/01/08	44	59
458	SE	Alpine	2909	3197	12/01/07	12/01/06	01/07/08	01/09/07	02/01/08	02/01/07	11/26/07	12/07/07	12/17/07	02/15/08	02/11/08	04/11/08	06/16/08	08/15/08	08/18/08	574	714
460	SE	Jamul West	3213	4109	08/01/07	08/01/06	09/06/07	09/08/06	10/01/07	10/01/06	10/22/07	11/02/07	11/12/07	01/11/08	03/10/08	05/09/08	06/30/08	08/29/08	09/01/08	648	762
462	SE	Potrero	3644	4264	07/01/07	07/01/06	08/06/07	08/08/06	09/01/07	09/01/06	10/22/07	11/02/07	11/12/07	01/11/08	03/31/08	05/30/08	07/14/08	09/12/08	09/15/08	1224	1266
463	SE	Jamul East	2857	3109	08/01/07	08/01/06	09/06/07	09/08/06	10/01/07	10/01/06	10/22/07	11/02/07	11/12/07	01/11/08	03/10/08	05/09/08	06/30/08	08/29/08	09/01/08	740	818
464	SE	Boulevard	2499	2802	06/01/08	07/01/06	07/07/08	08/08/06	08/01/07	09/01/06	09/24/07	10/05/07	10/15/07	12/14/07	02/11/08	04/11/08	06/16/08	08/15/08	08/18/08	1114	1146
465	SE	Barett Lake	2864	3107	09/01/07	09/01/06	10/08/07	10/08/06	11/01/07	11/01/06	10/22/07	11/02/07	11/12/07	01/11/08	03/31/08	05/30/08	07/14/08	09/12/08	09/15/08	768	789
466	SE	Buckman Sprgs 1	1820	1968	09/01/07	09/01/06	10/08/07	10/08/06	11/01/07	11/01/06	10/22/07	11/02/07	11/12/07	01/11/08	03/31/08	05/30/08	07/14/08	09/12/08	09/15/08	304	314
467	SE	Descanso	1877	2470	01/01/08	01/01/07	02/06/08	02/08/07	03/01/08	03/01/07	09/24/07	10/05/07	10/15/07	12/14/07	04/14/08	06/13/08	07/28/08	09/26/08	09/29/08	286	304
468	SE	Viejas	3572	4385	04/01/08	04/01/07	05/06/08	05/08/07	06/01/08	06/01/07	09/24/07	10/05/07	10/15/07	12/14/07	03/10/08	05/09/08	06/30/08	08/29/08	09/01/08	891	952
469	SE	Mt Laguna	3681	3855	01/01/08	01/01/07	02/06/08	02/08/07	03/01/08	03/01/07	09/24/07	10/05/07	10/15/07	12/14/07	04/14/08	06/13/08	07/28/08	09/26/08	09/29/08	368	426
475	SE	Blossom Vly 2	1134	1203	09/01/07	09/01/06	10/08/07	10/08/06	11/01/07	11/01/06	11/26/07	12/07/07	12/17/07	02/15/08	02/11/08	04/11/08	06/16/08	08/15/08	08/18/08	325	382
477	SW	Eucalyptus Hills 2	1252	1472	03/01/08	03/01/07	04/07/08	04/10/07	05/01/08	05/01/07	11/26/07	12/07/07	12/17/07	02/15/08	02/11/08	04/11/08	06/16/08	08/15/08	08/18/08	193	272
479	SE	Buckman Sprgs 2	1978	2568	09/01/07	09/01/06	10/08/07	10/08/06	11/01/07	11/01/06	10/22/07	11/02/07	11/12/07	01/11/08	03/31/08	05/30/08	07/14/08	09/12/08	09/15/08	438	448
510	SW	Mission Hills	2431	2774	10/01/07	10/01/06	11/06/07	11/08/06	12/01/07	12/01/06	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	11	12
512	SW	State College	2301	2503	11/01/07	11/01/06	12/06/07	12/08/06	01/01/08	01/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	9	9
513	SW	Center City	1898	2430	10/01/07	10/01/06	11/06/07	11/08/06	12/01/07	12/01/06	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	5	5

Draft

Vegetation Management Activity Schedule
Cycle 10 (2007 - 2008)

VMA	Co	Name	C10 Estimated Trees	C9 Estimated Trees	C10 Pre-Inspect Start	C9 Pre-Inspection Start	C10 Pre-inspection Audit start	C9 Pre-Inspection Audit Start	C10 Tree Trim Start	C9 Tree Trim Start	C10 Notification Start	C10 Notification End	C10 Chemical Start	C10 Chemical End	C10 Mechanical Start	C10 Mechanical End	C10 Reclear Start	C10 Reclear End	C10 Compliance Audit Start	Estimated Brush Poles	Estimate Managed Poles
514	SW	East San Diego	3732	4419	11/01/07	11/01/06	12/06/07	12/08/06	01/01/08	01/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	9	9
518	SW	National City	3322	3647	08/01/07	08/01/06	09/06/07	09/08/06	10/01/07	10/01/06	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	0	0
519	SW	Paradise Hills	2525	2906	08/01/07	08/01/06	09/06/07	09/08/06	10/01/07	10/01/06	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	0	0
520	SW	Chula Vista West	3443	3846	07/01/07	07/01/06	08/06/07	08/08/06	09/01/07	09/01/06	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	98	125
521	SW	Chula Vista East	2628	3189	07/01/07	07/01/06	08/06/07	08/08/06	09/01/07	09/01/06	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	19	19
527	SW	Coronado -Imp	1734	1988	07/01/07	07/01/06	08/06/07	08/08/06	09/01/07	09/01/06	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	12	12
552	SW	Bonita	2314	2654	08/01/07	08/01/06	09/06/07	09/08/06	10/01/07	10/01/06	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	1	1
553	SW	Otay Mesa	761	1016	07/01/07	07/01/06	08/06/07	08/08/06	09/01/07	09/01/06	11/26/07	12/07/07	12/17/07	02/15/08	03/10/08	05/09/08	06/30/08	08/29/08	09/01/08	123	135
601	SW	Del Mar	2108	2575	03/01/08	03/01/07	04/07/08	04/10/07	05/01/08	05/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	18	19
602	SW	Solana Beach	1253	1647	05/01/08	05/01/07	06/06/08	06/08/07	07/01/08	07/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	1	1
603	NW	Encinitas South 1	1603	1959	10/01/07	10/01/06	11/06/07	11/08/06	12/01/07	12/01/06	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	0	0
604	NW	Encinitas North 1	2542	2729	10/01/07	09/01/06	11/06/07	10/08/06	12/01/07	11/01/06	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	9	9
605	NW	Carlsbad	3863	5399	09/01/07	09/01/06	10/08/07	10/08/06	11/01/07	11/01/06	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	34	34
606	NW	Vista North 1	2646	2973	01/01/08	01/01/07	02/06/08	02/08/07	03/01/08	03/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	28	36
607	NW	Oceanside North 1	2813	2882	08/01/07	08/01/06	09/06/07	09/08/06	10/01/07	10/01/06	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	10	10
610	NW	Vista South	1970	2307	12/01/07	12/01/06	01/07/08	01/09/07	02/01/08	02/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	5	5
611	NW	Oceanside South	2054	2432	08/01/07	08/01/06	09/06/07	09/08/06	10/01/07	10/01/06	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	2	2
614	NW	Encinitas South 2	1238	1338	10/01/07	10/01/06	11/06/07	11/08/06	12/01/07	12/01/06	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	10	10
616	NW	Oceanside North 2	2132	2541	08/01/07	08/01/06	09/06/07	09/08/06	10/01/07	10/01/06	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	59	82
623	NW	Encinitas North 2	1730	2218	12/01/07	12/01/06	01/07/08	01/09/07	02/01/08	02/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	16	16
624	NW	Vista North 2	2374	2684	02/01/08	02/01/07	03/06/08	03/08/07	04/01/08	04/01/07	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	0	0
651	NW	Rho S Fe S 1	2611	3555	11/01/07	11/01/06	12/06/07	12/08/06	01/01/08	01/01/07	11/26/07	12/07/07	12/17/07	02/15/08	04/14/08	06/13/08	07/28/08	09/26/08	09/29/08	72	130
652	NW	Rho S Fe N 1	2625	3605	10/01/07	10/01/06	11/06/07	11/08/06	12/01/07	12/01/06	11/26/07	12/07/07	12/17/07	02/15/08	04/14/08	06/13/08	07/28/08	09/26/08	09/29/08	139	257
653	NW	Rho S Fe N 2	2673	3269	12/01/07	12/01/06	01/07/08	01/09/07	02/01/08	02/01/07	11/26/07	12/07/07	12/17/07	02/15/08	04/14/08	06/13/08	07/28/08	09/26/08	09/29/08	152	314
654	NW	Buena Vista 1	2541	2798	01/01/08	01/01/07	02/06/08	02/08/07	03/01/08	03/01/07	09/24/07	10/05/07	10/15/07	12/14/07	04/14/08	06/13/08	07/28/08	09/26/08	09/29/08	270	437
655	NW	Gopher CyNWest	2571	3171	02/01/08	02/01/07	03/06/08	03/08/07	04/01/08	04/01/07	09/24/07	10/05/07	10/15/07	12/14/07	03/31/08	05/30/08	07/14/08	09/12/08	09/15/08	426	653
670	NW	Buena Vista 2	1650	2041	01/01/08	01/01/07	02/06/08	02/08/07	03/01/08	03/01/07	09/24/07	10/05/07	10/15/07	12/14/07	04/14/08	06/13/08	07/28/08	09/26/08	09/29/08	257	393
673	NW	Rho S Fe S 2	2106	2552	11/01/07	11/01/06	12/06/07	12/08/06	01/01/08	01/01/07	11/26/07	12/07/07	12/17/07	02/15/08	04/14/08	06/13/08	07/28/08	09/26/08	09/29/08	83	206
674	NW	Rho S Fe S 3	1363	1643	11/01/07	11/01/06	12/06/07	12/08/06	01/01/08	01/01/07	11/26/07	12/07/07	12/17/07	02/15/08	04/14/08	06/13/08	07/28/08	09/26/08	09/29/08	60	140
701	NW	San Clemente	1822	2083	07/01/07	08/01/06	08/06/07	09/08/06	09/01/07	10/01/06	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	12	13
702	NW	Dana Point 1	746	943	07/01/07	07/01/06	08/06/07	08/08/06	09/01/07	09/01/06	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	0	0
703	NW	San Juan Capistrano	1765	2104	07/01/07	07/01/06	08/06/07	08/08/06	09/01/07	09/01/06	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	21	21
707	NW	Laguna Hills	978	1288	07/01/07	07/01/06	08/06/07	08/08/06	09/01/07	09/01/06	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	27	27
708	NW	Dana Point 2	881	932	07/01/07	07/01/06	08/06/07	08/08/06	09/01/07	09/01/06	12/24/07	01/04/07	01/14/08	03/14/08	05/12/08	07/11/08			07/14/08	3	3
752	NW	Ortega	863	946	07/01/07	07/01/06	08/06/07	08/08/06	09/01/07	09/01/06	11/26/07	12/07/07	12/17/07	02/15/08	03/31/08	05/30/08	07/14/08	09/12/08	09/15/08	186	212

VMA	Co	Name	C10 Notify Start	C10 Notify End	C10 Chem Start	C10 Chem End	C10 Mech Start	C10 Mech End	C10 Reclear Start	C10 Reclear End	C10 Compliance Audit Start	C10 Compliance Audit End
210	SW	Point Loma	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
212	SW	Mission Bay	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
215	SW	La Jolla	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
220	SW	Mission Valley	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
221	SW	Mira Mesa	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
302	NE	San Marcos	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
304	NE	Escondido North	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
305	NE	Escondido Central	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
306	NE	Escondido South	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
309	SW	Rancho Bernardo	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
310	SW	Poway North	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
311	SW	Poway South	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
312	NW	Fallbrook West 1	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
313	NW	Fallbrook West 2	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
314	NW	Fallbrook West 3	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
350	NE	Lk Hodges South	10/22/2007	11/2/2007	11/12/2007	1/11/2008	2/11/2008	4/11/2008	6/16/2008	8/15/2008	8/18/2008	9/19/2008
351	NE	Lk Hodges North	10/22/2007	11/2/2007	11/12/2007	1/11/2008	2/11/2008	4/11/2008	6/16/2008	8/15/2008	8/18/2008	9/19/2008
352	SE	San Pasqual	11/26/2007	12/7/2007	12/17/2007	2/15/2008	3/10/2008	5/9/2008	6/30/2008	8/29/2008	9/1/2008	10/3/2008
353	SW	Highland Valley	11/26/2007	12/7/2007	12/17/2007	2/15/2008	3/10/2008	5/9/2008	6/30/2008	8/29/2008	9/1/2008	10/3/2008
354	SE	Ramona South 1	11/26/2007	12/7/2007	12/17/2007	2/15/2008	3/31/2008	5/30/2008	7/14/2008	9/12/2008	9/15/2008	10/17/2008
355	SE	Ramona East 1	11/26/2007	12/7/2007	12/17/2007	2/15/2008	3/31/2008	5/30/2008	7/14/2008	9/12/2008	9/15/2008	10/17/2008
356	SE	Ramona North	11/26/2007	12/7/2007	12/17/2007	2/15/2008	3/31/2008	5/30/2008	7/14/2008	9/12/2008	9/15/2008	10/17/2008
357	NE	Lake Wohlford	11/26/2007	12/7/2007	12/17/2007	2/15/2008	2/11/2008	4/11/2008	6/16/2008	8/15/2008	8/18/2008	9/19/2008
358	NE	Vly Center East 1	11/26/2007	12/7/2007	12/17/2007	2/15/2008	3/10/2008	5/9/2008	6/30/2008	8/29/2008	9/1/2008	10/3/2008
359	NE	Vly Center West 1	11/26/2007	12/7/2007	12/17/2007	2/15/2008	3/10/2008	5/9/2008	6/30/2008	8/29/2008	9/1/2008	10/3/2008
360	NE	Pauma Valley 1	11/26/2007	12/7/2007	12/17/2007	2/15/2008	3/10/2008	5/9/2008	6/30/2008	8/29/2008	9/1/2008	10/3/2008
361	NE	Pala	10/22/2007	11/2/2007	11/12/2007	1/11/2008	3/31/2008	5/30/2008	7/14/2008	9/12/2008	9/15/2008	10/17/2008
362	NE	Jesmond Dene	10/22/2007	11/2/2007	11/12/2007	1/11/2008	2/11/2008	4/11/2008	6/16/2008	8/15/2008	8/18/2008	9/19/2008
363	NE	Hidden Meadows	10/22/2007	11/2/2007	11/12/2007	1/11/2008	2/11/2008	4/11/2008	6/16/2008	8/15/2008	8/18/2008	9/19/2008
364	NE	Courser Canyon 1	11/26/2007	12/7/2007	12/17/2007	2/15/2008	2/11/2008	4/11/2008	6/16/2008	8/15/2008	8/18/2008	9/19/2008
365	SE	Ramona West	11/26/2007	12/7/2007	12/17/2007	2/15/2008	3/31/2008	5/30/2008	7/14/2008	9/12/2008	9/15/2008	10/17/2008
366	NE	Rincon	11/26/2007	12/7/2007	12/17/2007	2/15/2008	3/31/2008	5/30/2008	7/14/2008	9/12/2008	9/15/2008	10/17/2008
367	SE	Pine Hills 2	9/24/2007	10/5/2007	10/15/2007	12/14/2007	4/14/2008	6/13/2008	7/28/2008	9/26/2008	9/29/2008	10/31/2008
368	SE	Pine Hills 1	9/24/2007	10/5/2007	10/15/2007	12/14/2007	4/14/2008	6/13/2008	7/28/2008	9/26/2008	9/29/2008	10/31/2008
369	SE	Harrison Park	9/24/2007	10/5/2007	10/15/2007	12/14/2007	4/14/2008	6/13/2008	7/28/2008	9/26/2008	9/29/2008	10/31/2008
370	NE	Palomar Mtn 2	9/24/2007	10/5/2007	10/15/2007	12/14/2007	4/14/2008	6/13/2008	7/28/2008	9/26/2008	9/29/2008	10/31/2008
371	NE	Warner Springs	9/24/2007	10/5/2007	10/15/2007	12/14/2007	2/11/2008	4/11/2008	6/16/2008	8/15/2008	8/18/2008	9/19/2008
372	SE	Borrego	9/24/2007	10/5/2007	10/15/2007	12/14/2007	2/11/2008	4/11/2008	6/16/2008	8/15/2008	8/18/2008	9/19/2008
373	NE	Mesa Grande 2	9/24/2007	10/5/2007	10/15/2007	12/14/2007	4/14/2008	6/13/2008	7/28/2008	9/26/2008	9/29/2008	10/31/2008
374	NE	Mesa Grande 1	9/24/2007	10/5/2007	10/15/2007	12/14/2007	4/14/2008	6/13/2008	7/28/2008	9/26/2008	9/29/2008	10/31/2008
375	NE	Palomar Mtn 1	9/24/2007	10/5/2007	10/15/2007	12/14/2007	4/14/2008	6/13/2008	7/28/2008	9/26/2008	9/29/2008	10/31/2008
376	NE	Lilac 1	10/22/2007	11/2/2007	11/12/2007	1/11/2008	3/31/2008	5/30/2008	7/14/2008	9/12/2008	9/15/2008	10/17/2008
377	SE	Whispering Pines 1	9/24/2007	10/5/2007	10/15/2007	12/14/2007	4/14/2008	6/13/2008	7/28/2008	9/26/2008	9/29/2008	10/31/2008
378	NE	Pala	11/26/2007	12/7/2007	12/17/2007	2/15/2008	2/11/2008	4/11/2008	6/16/2008	8/15/2008	8/18/2008	9/19/2008
379	NE	Rainbow 1	11/26/2007	12/7/2007	12/17/2007	2/15/2008	3/31/2008	5/30/2008	7/14/2008	9/12/2008	9/15/2008	10/17/2008
380	NW	Pala Mesa	10/22/2007	11/2/2007	11/12/2007	1/11/2008	3/31/2008	5/30/2008	7/14/2008	9/12/2008	9/15/2008	10/17/2008
381	NW	Winterwarm	10/22/2007	11/2/2007	11/12/2007	1/11/2008	4/14/2008	6/13/2008	7/28/2008	9/26/2008	9/29/2008	10/31/2008
382	NW	Gopher CyNEast 1	10/22/2007	11/2/2007	11/12/2007	1/11/2008	3/31/2008	5/30/2008	7/14/2008	9/12/2008	9/15/2008	10/17/2008
383	NW	Bonsall 1	9/24/2007	10/5/2007	10/15/2007	12/14/2007	4/14/2008	6/13/2008	7/28/2008	9/26/2008	9/29/2008	10/31/2008
384	NW	Fallbrook East 1	10/22/2007	11/2/2007	11/12/2007	1/11/2008	3/31/2008	5/30/2008	7/14/2008	9/12/2008	9/15/2008	10/17/2008
385	NW	De Luz 1	10/22/2007	11/2/2007	11/12/2007	1/11/2008	4/14/2008	6/13/2008	7/28/2008	9/26/2008	9/29/2008	10/31/2008
386	NE	Santa Ysabel	9/24/2007	10/5/2007	10/15/2007	12/14/2007	4/14/2008	6/13/2008	7/28/2008	9/26/2008	9/29/2008	10/31/2008
387	NW	Gopher CyNEast 2	9/24/2007	10/5/2007	10/15/2007	12/14/2007	3/31/2008	5/30/2008	7/14/2008	9/12/2008	9/15/2008	10/17/2008
388	NE	Raintbow 2	11/26/2007	12/7/2007	12/17/2007	2/15/2008	2/11/2008	4/11/2008	6/16/2008	8/15/2008	8/18/2008	9/19/2008
389	NE	De Luz 2	10/22/2007	11/2/2007	11/12/2007	1/11/2008	4/14/2008	6/13/2008	7/28/2008	9/26/2008	9/29/2008	10/31/2008
390	NW	Fallbrook East 2	10/22/2007	11/2/2007	11/12/2007	1/11/2008	3/31/2008	5/30/2008	7/14/2008	9/12/2008	9/15/2008	10/17/2008
391	NE	Vly Center East 2	11/26/2007	12/7/2007	12/17/2007	2/15/2008	3/10/2008	5/9/2008	6/30/2008	8/29/2008	9/1/2008	10/3/2008
392	NE	Vly Center East 3	9/24/2007	10/5/2007	10/15/2007	12/14/2007	3/10/2008	5/9/2008	6/30/2008	8/29/2008	9/1/2008	10/3/2008
393	SE	Ramona South 2	11/26/2007	12/7/2007	12/17/2007	2/15/2008	3/31/2008	5/30/2008	7/14/2008	9/12/2008	9/15/2008	10/17/2008
394	SE	Ramona East 2	11/26/2007	12/7/2007	12/17/2007	2/15/2008	3/31/2008	5/30/2008	7/14/2008	9/12/2008	9/15/2008	10/17/2008
395	NE	Courser Canyon 2	11/26/2007	12/7/2007	12/17/2007	2/15/2008	2/11/2008	4/11/2008	6/16/2008	8/15/2008	8/18/2008	9/19/2008
396	NE	Lilac 2	10/22/2007	11/2/2007	11/12/2007	1/11/2008	3/31/2008	5/30/2008	7/14/2008	9/12/2008	9/15/2008	10/17/2008
397	SE	Whispering Pines 2	9/24/2007	10/5/2007	10/15/2007	12/14/2007	4/14/2008	6/13/2008	7/28/2008	9/26/2008	9/29/2008	10/31/2008
398	NE	Bonsall 2	9/24/2007	10/5/2007	10/15/2007	12/14/2007	4/14/2008	6/13/2008	7/28/2008	9/26/2008	9/29/2008	10/31/2008
399	NE	Vly Center West 2	11/26/2007	12/7/2007	12/17/2007	2/15/2008	3/10/2008	5/9/2008	6/30/2008	8/29/2008	9/1/2008	10/3/2008
400	SW	Allied Gd San Carlos	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
403	SW	Lem Grv-Sp Vly	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
405	SW	La Mesa West	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
406	SW	La Mesa East	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
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410	SW	El Cajon West	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
412	SW	Rancho San Diego	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
414	SW	El Cajon East	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
416	SW	Santee	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
420	SE	Lakeside	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
450	SE	Blossom Valley 1	11/26/2007	12/7/2007	12/17/2007	2/15/2008	2/11/2008	4/11/2008	6/16/2008	8/15/2008	8/18/2008	9/19/2008
451	SW	Eucalyptus Hills 1	11/26/2007	12/7/2007	12/17/2007	2/15/2008	2/11/2008	4/11/2008	6/16/2008	8/15/2008	8/18/2008	9/19/2008
452	SE	San Vincente	11/26/2007	12/7/2007	12/17/2007	2/15/2008	2/11/2008	4/11/2008	6/16/2008	8/15/2008	8/18/2008	9/19/2008
453	SE	Barona	11/26/2007	12/7/2007	12/17/2007	2/15/2008	3/10/2008	5/9/2008	6/30/2008	8/29/2008	9/1/2008	10/3/2008
454	SE	Dehesa	10/22/2007	11/2/2007	11/12/2007	1/11/2008	3/10/2008	5/9/2008	6/30/2008	8/29/2008	9/1/2008	10/3/2008
455	SE	Crest	11/26/2007	12/7/2007	12/17/2007	2/15/2008	2/11/2008	4/11/2008	6/16/2008	8/15/2008	8/18/2008	9/19/2008
456	SE	Singing Hills	11/26/2007	12/7/2007	12/17/2007	2/15/2008	3/10/2008	5/9/2008	6/30/2008	8/29/2008	9/1/2008	10/3/2008
458	SE	Alpine	11/26/2007	12/7/2007	12/17/2007	2/15/2008	2/11/2008	4/11/2008	6/16/2008	8/15/2008	8/18/2008	9/19/2008
460	SE	Jamul West	10/22/2007	11/2/2007	11/12/2007	1/11/2008	3/10/2008	5/9/2008	6/30/2008	8/29/2008	9/1/2008	10/3/2008
462	SE	Potrero	10/22/2007	11/2/2007	11/12/2007	1/11/2008	3/31/2008	5/30/2008	7/14/2008	9/12/2008	9/15/2008	10/17/2008
463	SE	Jamul East	10/22/2007	11/2/2007	11/12/2007	1/11/2008	3/10/2008	5/9/2008	6/30/2008	8/29/2008	9/1/2008	10/3/2008
464	SE	Boulevard	9/24/2007	10/5/2007	10/15/2007	12/14/2007	2/11/2008	4/11/2008	6/16/2008	8/15/2008	8/18/2008	9/19/2008
465	SE	Barett Lake	10/22/2007	11/2/2007	11/12/2007	1/11/2008	3/31/2008	5/30/2008	7/14/2008	9/12/2008	9/15/2008	10/17/2008
466	SE	Buckman Sprgs 1	10/22/2007	11/2/2007	11/12/2007	1/11/2008	3/31/2008	5/30/2008	7/14/2008	9/12/2008	9/15/2008	10/17/2008
467	SE	Descanso	9/24/2007	10/5/2007	10/15/2007	12/14/2007	4/14/2008	6/13/2008	7/28/2008	9/26/2008	9/29/2008	10/31/2008
468	SE	Viejas	9/24/2007	10/5/2007	10/15/2007	12/14/2007	3/10/2008	5/9/2008	6/30/2008	8/29/2008	9/1/2008	10/3/2008
469	SE	Mt Laguna	9/24/2007	10/5/2007	10/15/2007	12/14/2007	4/14/2008	6/13/2008	7/28/2008	9/26/2008	9/29/2008	10/31/2008
475	SE	Blossom Vly 2	11/26/2007	12/7/2007	12/17/2007	2/15/2008	2/11/2008	4/11/2008	6/16/2008	8/15/2008	8/18/2008	9/19/2008
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479	SE	Buckman Sprgs 2	10/22/2007	11/2/2007	11/12/2007	1/11/2008	3/31/2008	5/30/2008	7/14/2008	9/12/2008	9/15/2008	10/17/2008
510	SW	Mission Hills	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
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513	SW	Center City	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
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519	SW	Paradise Hills	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
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527	SW	Coronado -Imp	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
552	SW	Bonita	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
553	SW	Otay Mesa	11/26/2007	12/7/2007	12/17/2007	2/15/2008	3/10/2008	5/9/2008	6/30/2008	8/29/2008	9/1/2008	10/3/2008
601	SW	Del Mar	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
602	SW	Solana Beach	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
603	NW	Encinitas South 1	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
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605	NE	Carlsbad	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
606	NW	Vista North 1	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
607	NW	Oceanside North 1	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
610	NW	Vista South	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
611	NW	Oceanside South	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
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616	NW	Oceanside North 2	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
623	NW	Encinitas North 2	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
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654	NW	Buena Vista 1	9/24/2007	10/5/2007	10/15/2007	12/14/2007	4/14/2008	6/13/2008	7/28/2008	9/26/2008	9/29/2008	10/31/2008
655	NW	Gopher CyNWest	9/24/2007	10/5/2007	10/15/2007	12/14/2007	3/31/2008	5/30/2008	7/14/2008	9/12/2008	9/15/2008	10/17/2008
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673	NW	Rho S Fe S 2	11/26/2007	12/7/2007	12/17/2007	2/15/2008	4/14/2008	6/13/2008	7/28/2008	9/26/2008	9/29/2008	10/31/2008
674	NW	Rho S Fe S 3	11/26/2007	12/7/2007	12/17/2007	2/15/2008	4/14/2008	6/13/2008	7/28/2008	9/26/2008	9/29/2008	10/31/2008
701	NW	San Clemente	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
702	NW	Dana Point 1	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
703	NW	San Juan Capistrano	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
707	NW	Laguna Hills	12/24/2007	1/4/2007	1/14/2008	3/14/2008	5/12/2008	7/11/2008			7/14/2008	8/15/2008
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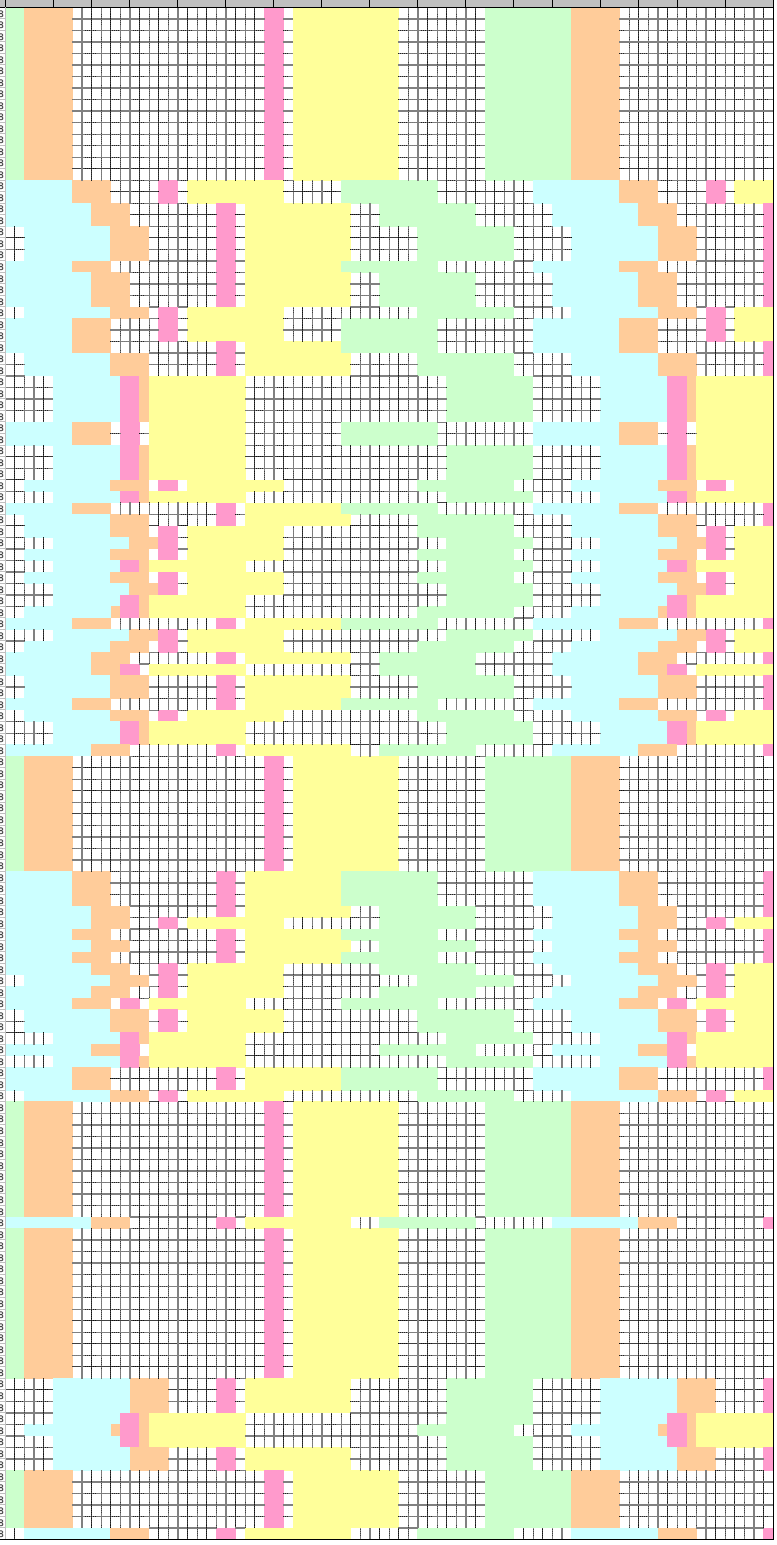
752	NW	Ortega	11/26/2007	12/7/2007	12/17/2007	2/15/2008	3/31/2008	5/30/2008	7/14/2008	9/12/2008	9/15/2008	10/17/2008



APPENDIX 3

SDGE

A Sempra Energy utility®

Vegetation Management Program

Tree Pre-inspection Procedures

May 2007

TABLE OF CONTENTS

San Diego Gas and Electric Company
Vegetation Management Contacts

NAME	TITLE	OFFICE	CELL
Akau, Don	**VMP Manager**	858-654-8631	619-921-7073
Baldestamon, Rudy	**System Support Analyst**	858-654-6458	619-929-5588
Bohnett, Dan	**Area Forester**	858-650-4050	619-980-5478
Daleo, Michael	**System Forester**	858 654-8630	619-921-2121
DeSonia, Dave	**Contract Administrator – Pole Brushing**	858-654-8634	619-838-7264
Govers, Dave	**System Support Analyst - Hardware Support**	858-637-3717	619-520-8399
Hardesty, Mike	**Contract Administrator – CMP/ Wood Pole Inspection**	858-650-4045	619-921-2768
Miles, Jim	**Team Lead – Pole Brushing**	858-654-8602	619-921-4026
Mortier, Hal	**Fire Coordinator**	858-654-8683	619-921-2330
Novotny, Jen	**System Support Analyst**	858-650-4042	619-921-6203
Rodgers, Diane	**System Support Team Lead**	858-654-8624	619-572-8312
Taylor, Bruce	**Area Forester Southern**	858-654-8605	619-921-4388
Lyle, Randy	**Contract Administrator – Pole Brushing**	858-654-8617	619-964-7460
Thompson, Chris	**Area Forester Northern**	858-650-4056	619-520-6985
Valders, Kathy	**Staff Assistant**	858-654-8608	619-921-7391
Webb, Jimmie	**Area Forester Quality Assurance**	858-654-8651	619-778-2694
Zocco, Rob	**Area Forester Pre-inspection**	858-654-8614	619-921-5492
Tree Help Desk		858-654-8608	619-921-7391

Section 1: Introduction

Overview

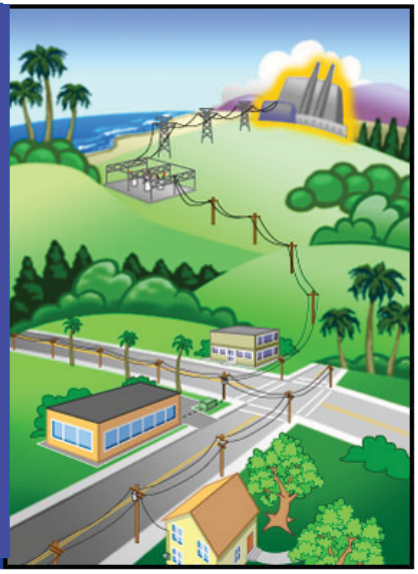
The Vegetation Management Department's role within San Diego Gas and Electric Company (SDG&E) involves identifying, recording, and managing an inventory of vegetation within SDG&E's service territory. The main purpose of this inventory is to ensure vegetation does not encroach within the required minimum clearance zones mandated by the California Public Utilities Commission (CPUC), and other applicable laws and regulations. Maintaining an accurate database helps to ensure safe, reliable, and cost-effective service to SDG&E customers. The entire SDG&E service area is sub-divided into 133 Vegetation Management Areas known as VMAs. Each VMA is given a unique three-digit number identifying its location within the service area.
This guide is a supplement to the GFMS – MDT User Guide.

Pre-inspection accuracy is critical to the effectiveness of SDG&E's Vegetation Management Program. High quality pre-inspection ensures adherence to the Vegetation Management Master Schedule and compliance requirements, and improves the pruning contractors' ability to work efficiently and productively. If the pre-inspection contractor performance is below SDG&E's standards, the pre-inspector contractor may be required to re-inspect a VMA, spending additional time and resources at the contractor's expense to make the necessary corrections.

Missed trees puts both the pre-inspection contractor and SDG&E at risk for compliance infractions, fires, safety issues, tree caused outages, and delays to schedule. Over-listing can result in unnecessary pruning, additional costs to SDG&E, and increased customer complaints and refusals. The pruning contractor relies on a forecasted number of trees to be worked and adjusts their resource levels accordingly.

How is Electricity generated and delivered to your home?

- Generation
- Transmission Lines
- Substations
- Distribution Lines



How does it work?

GENERATING STATIONS or power plants are where electricity is produced by utilizing resources such as natural gas, the sun, wind and steam heat from within the earth. With the use of magnets on a spinning shaft, mechanical energy is converted to electrical energy.

TRANSMISSION LINES are the "energy superhighways" of an electric system, carrying large amounts of electricity from power plants over long distances and at very high voltages – typically 69,000 to 500,000 volts. SDG&E has over 1,800 miles of transmission lines in its service territory, but has only two connections to the state's electric grid.

SUBSTATIONS are specialized equipment to reduce or "step down" transmission line voltage and connect high voltage transmission lines to lower voltage distribution lines. SDG&E currently operates more than 200 substations.

DISTRIBUTION LINES are the "local streets" that deliver electricity directly to homes and businesses. SDG&E operates over 15,000 miles of distribution lines.

Vegetation Management Definitions

Area Forester: SDG&E individual responsible for managing the tree contractor and the scheduled work completion and compliance of each VMA in his or her territory.

Bubble Sheet: A "machine-readable" form used by the tree contractor to document the completion status of each tree that has been assigned in a Work Release.

Cal Fire: (Previously known as California Department of Forestry and Fire Protection, CDF): State fire agency responsible for fire suppression in the State Responsibility Area, and enacting and regulating state forest practice rules.

California Public Utilities Commission (CPUC): The governing body that regulates the business practices of utilities throughout the state of California.

Canned Comment: Standard, pre-defined wording found in selected tree notes that are used to clarify work requirements. Canned comments are not to be altered except when required for date and initials.

Clearance: Measurement, typically in units of feet and inches, of the closest distance between vegetation and an energized overhead electric conductor.

Clustering: Using one icon for multiple trees sharing the same characteristics (DBH, height, species, clearance, etc) when the amount of trees in a span makes it impractical to have all trees as individual icons.

Conductor: Path through which an electric current flows, metal wire or cable.

Crown Reduction: Reducing the height of a tree under the powerlines in order to comply with minimum clearance regulations.

Customer: Person or entity who is a customer of SDG&E who either owns, manages, or occupies the property upon which work is to be performed.

Customer Notification: Notice to SDG&E customers prior to the commencement of scheduled work.

Customer Refusal: Property owner refusing SDG&E or representative contractor access to property for purposes of inspection, or from performing pruning to maintain required clearances for the duration of the pruning cycle.

Cycle (Pre-inspection): The twelve month period of time between scheduled inspections of the same VMA.

Cycle Busters: Trees that are very fast growing and do not hold compliance for the complete VMA cycle.

Deleted Tree: A tree or brush that does not meet inventory specifications or does not physically exist in the field and is removed from the inventory (VMS).

Diameter at Breast Height (DBH): Measurement of a tree's diameter in inches, taken at 4 ½ feet above ground level. Trees existing on a slope are measured from the upslope side of the tree.

Dispatch Order: A subset of a work release. A specific group of tree and pole brush records to be updated.

Environmentally Sensitive Area (ESA). An area that contains or provides habitat for sensitive, threatened, or endangered species, or encompasses a protected cultural resource. May require an evaluation by a biologist or archaeologist to determine if any work restrictions apply.

Exception Tree: Tree issued to pruning contractor whose completion is delayed due to uncontrollable circumstances such as environmental restriction, property access, etc.

File Upload: The process of connecting an MDT unit to a phone cable connection to transfer files from the unit to the SDG&E server.

General Order 95, Rule 35 (GO 95, Rule 35): Mandate set forth by the California Public Utilities Commission requiring a minimum clearance between vegetation and overhead high voltage conductors. Requirement applies year round in SDG&E territory.

Geographic Facilities Mapping System (GFMS): The mapping, facilities management, and geographic information system used by SDG&E to manage aspects of its operations including vegetation management and planning.

Geonet: The *Windows*-version mapping application installed on the MDT that uses GFMS.

Icon: A symbol used in the MDT computer to represent an inventory tree.

Institute of Electrical and Electronics Engineers (IEEE): Professional association of engineers, scientists and professionals for the advancement of technology.

Inventory Brush: Vegetation with a DBH of less than three (3) inches that has the potential to encroach within the applicable minimum clearance to overhead conductors, or otherwise poses a potential threat to SDG&E

facilities, within 3 years from date of inspection.

Inventory Tree: Vegetation with a DBH of three (3) inches or greater that has the potential to encroach within the minimum clearance requirements of overhead conductors, or otherwise poses a potential threat to SDG&E facilities, within 3 years from date of inspection.

Local Responsibility Area (LRA): Urban areas of California where the local fire agency has the primary responsibility of fire suppression. GO 95, Rule 35 clearance requirements apply.

Major Woody Stem (MWS): Tree trunk (minimum 10 inches diameter at breast height) or tree limb (minimum 6 inches diameter) with less than 18 inches but greater than 6 inches from distribution voltage conductor, with sufficient strength and vigor to be exempt from G.O. 95, Rule 35 and PRC 4293 clearance requirements.

Matrix Address: a fictitious property address used for properties that have no posted street address number.

MDT Refresh: The process of updating vegetation data and graphics files on a desk top computer or MDT unit.

Memo Tree: Tree that is pruned outside routine schedule because it poses an accelerated threat to the high voltage electrical facilities (i.e. closer than minimum clearance requirements). Memos are classified as same day, next day, or grouped.

Mobil Data Terminal (MDT): The tablet PC used by pre-inspectors to update information in the GFMS.

Months to Next Trim: Estimated months it will take a tree to grow out of compliance. Consider species, growth rate, conditions, irrigation.

North American Reliability Council (NERC): Group of regional reliability councils formed to ensure the bulk electric systems that serve North America are adequate, reliable, and secure.

Ownership Type: The person or entity who owns the property where the tree exists.

Pole Number: The unique number assigned to any electrical pole or tower in SDG&E's service area.

Pre-inspector (PI): Contract individual responsible for field inspection of SDG&E tree and pole inventory, and updating data to reflect current conditions for the purpose of ensuring compliance with all applicable laws and regulations.

Primary Conductor: A conductor with a voltage between 2,400 volts (2.4kV) and 12,000 volts (12kV).

Property Owner: The person or entity who holds title to a property as recognized by the county.

Public Resource Code 4292: Requires 10 feet radial horizontal ground clearance of all flammable vegetation from the outer circumference of poles carrying non-exempt electrical hardware. Also requires a vertical clearance of 8 feet of all vegetation, and the removal of all dead and dying vegetation from ground level to top of pole.

Public Resource Code 4293: Minimum clearance requirement between all vegetation and high voltage electrical conductors in the SRA. Minimum clearances are:

- For any line operating at 2,400 to 72,000 volts, 4 feet
- For any line operating at 72,000 to 110,000 volts, 6 feet
- For any line operating at 110,000 or more volts, 10 feet

Qualified Line Clearance Arborist: Individual who has successfully completed the Line Clearance Arborist OSHA training for working on trees near high voltage equipment.

Reliability Tree: Any tree, located inside or outside the utility right of way, that has a reasonably good potential for interrupting service to an overhead circuit (excluding secondary) with the current routine cycle.

Removal: Vegetation (brush or tree) that is cut to ground level and all brush less than 3" diameter removed from site. Re-sprouting species are treated with an approved herbicide.

Secondary Distribution: Low voltage (0-750 volt) circuit between transformer and point of use.

Service Drop: Portion of the powerline from the secondary distribution line to the point of use (between pole and house).

Side Trim: Term for type of pruning conducted on a tree whose crown is predominately above the powerlines.

Span: The space between two power poles connected by powerlines.

Stand Alone: When only one type of voltage exists on a power pole (transmission, primary, or secondary).

State Responsibility Area (SRA). Designated areas of California where Cal Fire (CDF) has the primary responsibility of fire suppression. Public Resource Codes 4292 and 4293 and GO 95, Rule 35 clearance requirements apply.

Status Code: Identifies the current work status of an inventory tree (i.e., AT = assigned to contractor for pruning or removal, LC = listed clear and requires no pruning for cycle, LT = listed for pruning for cycle, PR = pending removal, RF = refusal, CT= completed pruning, RM = tree

removed, GR = grouped reliability, CJ = palm removals assigned to contractor *Connie Jo Services*, XT = exception).

Vegetation Management System (VMS): SDG&E computer software and hardware used to track, dispatch, and manage wrork.

Work Release: A function of the Vegetation Management System which allows dispatch orders to be created for work activities.

VMS

The Vegetation Management System (VMS) is a software application designed to record various layers of tree data and graphic images within a dynamic inventory of vegetation having the potential to grow into or fall into SDG&E electric power lines and facilities. VMS requires regular updates to maintain accuracy because trees continually grow and encroach the minimum clearance zones of overhead power lines. Trees also decline and die, and are removed by others. The VMS inventory needs to reflect these changes. The purpose of pre-inspection is to identify vegetation that requires pruning or removal in order to ensure compliance, and to maintain an accurate inventory of trees.

Rules and Regulations regarding Utility Vegetation Management

Two state laws pertaining to utilities and vegetation form the foundation of SDG&E's compliance efforts: 1) CPUC G.O. 95, Rule 35, and 2) Public Resource Code 4293.

California Public Utilities Commission (CPUC) General Order 95, Rule 35 requires an 18 inch radial clearance of all vegetation be maintained around conductors between 750 and 22,500 volts. The clearance requirements increase as the voltage increases. **GO 95, Rule 35 applies to the entire SDG&E territory year round**. (See *Table 1* for transmission clearance requirements). In VMAs where the **second digit** of the VMA number is 4 or less, only GO 95, Rule 35 applies (examples: VMA 2**1**0 or 2**2**0).

In the State Responsibility Areas where Cal Fire (CDF) is responsible for fire suppression, Public Resource Code (PRC), section 4293 requires that a 4 foot radial clearance be maintained for conductors between 2,400 and 72,000 volts. Clearance requirements increase as the voltage increases. Refer to the *CDF Power line Fire Prevention Manual* for additional information. The VMAs where PRC 4293 applies are identified with a **second digit** number of 5 or greater (examples: VMA 4**5**3 or 4**6**3 or 3**7**5). The exception is VMA 552 which is treated as LRA.

Additionally, the Federal Energy Regulatory Commission (FERC) requires specific minimum vegetation clearances for all overhead transmission circuits

energized at 230kV or higher, and any lower voltage transmission circuits determined by the Regional Reliability Organization (RRO) to be critical to the reliability of the region.

Refer to the Vegetation Management *Pole Brush Pre-Inspection Guidelines* for information and procedures regarding Public Resource Code 4292, pole brushing requirements.

Routine Pre-inspection

The purpose of routine pre-inspection is to identify vegetation for pruning or removal that will not maintain required clearances for a full cycle (fourteen months). Any tree that could possibly encroach non-compliant clearances within fourteen months should be flagged for pruning (LT).

It is required on a routine pre-inspection that every span of overhead conductors and all vegetation within each span be accurately surveyed and all inventory records updated. This includes transmission, primary, and open wire stand alone secondary conductors (not to include house/service drops or triplex secondary lines). Factors to consider when determining if a tree requires pruning for cycle include current clearance from facilities, tree species, potential tree growth rate, past pruning practices, site conditions, wind sway of trees and wire, wire sag, conductor voltage, and VMA location (LRA vs. SRA).

Environmentally Sensitive Areas (ESA)

The unique geography and climate of San Diego County combine to provide a rich diversity of flora and fauna species, including several that are threatened or endangered under state and/or federal law. SDG&E is committed to complying with all applicable environmental regulations. SDG&E's Subregional Natural Community Conservation Plan was implemented to avoid or minimize potential impacts or threats to sensitive species. The Plan, also referred to as the 50-Year Permit follows a comprehensive habitat approach to species protection while allowing the utility to provide and expand service to its customers, and to meet its regulatory responsibilities.

Procedures developed between SDG&E and state and federal wildlife agencies serve to ensure Vegetation Management activities follow applicable protocol. In designated environmentally sensitive areas of the service territory SDG&E schedules routine pruning and brushing activities outside the breeding season (March 1 - September 1) of protected bird species. Disturbance related to tree pruning and pole brushing activities is also avoided at protected cultural resource areas such as archaeological sites.

Clearance Requirements

Table 1: Bare Minimum Year-Round Radial Clearances Requirements for Trees and Energized Conductors
The clearances shown are to be maintained year round and in all weather conditions (during storms, high winds, and extreme temperatures both hot and cold which can cause power lines to sag).

Conductor Voltage	PRC 4293 (SRA)	CPUC General Order 95, Rule 35 (LRA)	*NERC FAC-003-1 (IEEE 516-2003)
500kV	10.0 ft	9.7 ft	14.7 ft
230kV	10.0 ft	2.7 ft	5.1 ft
138kV	10.0 ft	1.9 ft	2.9 ft
69kV	4.0 ft	1.5 ft	N/A
12kV	4.0 ft	1.5 ft	N/A
4.0kV	4.0 ft	1.5 ft	N/A
2.4kV	4.0 ft	1.5 ft	N/A
<750V	No strain or abrasion	No strain or abrasion	N/A

*NERC FAC-003-1 applies to transmission lines operated at 200kV and above or any lower voltage lines designated by the RRO (Regional Reliability Organization) as critical to the reliability of the electricity system in the region.

Vegetation Management Cycle

The VM cycle is the annual timeframe within the vegetation management master schedule that includes pre-inspection, pre-inspection auditing, pruning, and post-prune auditing activities. One cycle is defined as the time between two consecutive pre-inspections in the same VMA.

- Pre-inspection of a VMA is completed in a 30 day timeframe within the schedule.
- Pre-inspection audit is conducted the first month after the scheduled completion of pre-inspection.
- Pruning commences two months after pre-inspection. Pruning contractor has a 65-calendar day timeframe to complete all assigned work and to certify VMA per contract specifications.
- Post prune audit commences the first month after the scheduled completion of pruning. All trees pruned must maintain the required minimum clearance in *Table 1* above for a period of 12 months after completion.

Table 2: VMA Cycle – Example of the activity cycle for VMAs pre-inspected in the month of January. Master schedule includes approximately 10-12 VMAs per month.

	Activity	Start	Finish
1	Pre-inspection	01/01/2007	02/01/2007
2	Pre-inspection Audit	02/08/2007	02/28/2007
3	Routine Pruning	03/01/2007	05/01/2007
4	Pruning Audit	05/08/2007	05/31/2007
5	Pruning Compliance Cycle	03/01/2007	02/28/2008

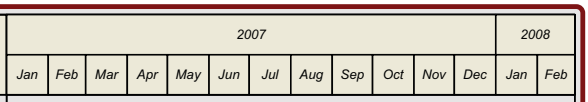


Table 3.1 and 3.2: Clearances and Tree Growth Rates - Use the following clearances as a guideline when determining whether to list a tree for pruning in LRA and SRA. Note: Tree growth rates are averages per year.

Table 3.1: Clearance Guidelines for listing in LRA

Tree Growth Rate per year	Open wire 2ndary	Primary	Transmission			
	up to 750 volts	up to 12kV	69kV	138kV	230kV	500kV
Very Fast = 6 ft & greater	2 ft or less	10 ft or less	12 ft or less	14 ft or less	20 ft or less	30 ft or less
Fast = 4 to 6 ft	2 ft or less	8 ft or less	10 ft or less	12 ft or less	20 ft or less	30 ft or less
Medium = 2 to 4 ft	in contact	6 ft or less	8 feet or less	10 ft or less	18 ft or less	25 ft or less
Slow = 0 to 2 ft	in contact	4 ft or less	8 feet or less	10 ft or less	18 ft or less	25 ft or less

Table 3.2: Clearance Guidelines for listing in SRA

Tree Growth Rate per year	Open wire 2ndary	Primary	Transmission			
	up to 750 volts	up to 12kV	69kV	138kV	230kV	500kV
Very Fast = 6 ft & greater	2 ft or less	12 ft or less	14 ft or less	16 ft or less	20 ft or less	30 ft or less
Fast = 4 to 6 ft	2 ft or less	10 ft or less	12 ft or less	16 ft or less	20 ft or less	30 ft or less
Medium = 2 to 4 ft	in contact	8 ft or less	10 ft or less	14 ft or less	18 ft or less	25 ft or less
Slow = 0 to 2 ft	in contact	6 ft or less	10 ft or less	12 ft or less	18 ft or less	25 ft or less

Pre-inspector should always consider the individual tree (not just the species in general) when determining whether to list a tree for pruning.

Clearances are to be measured from the closest point of the tree to the closest "high voltage" line. Clearances to secondary voltage shall only be used when the construction is stand-alone pole to pole.

Table 4: Minimum Radial Clearance Requirements – Post pruning clearances to be established at time of pruning.

SRA and LRA	Open wire 2ndary	Primary	Transmission			
Tree Growth rate per year	**up to 750 volts**	**up to 12kV**	**69kV**	**138kV**	**230kV**	**500kV**
Very Fast = 6 ft & greater	**4 feet**	**10 feet**	**20 feet**	**25 feet**	**30 feet**	**35 feet**
Fast = 4 to 6 ft	**4 feet**	**10 feet**	**15 feet**	**20 feet**	**25 feet**	**35 feet**
Medium = 2 to 4 ft	**4 feet**	**10 feet**	**15 feet**	**20 feet**	**25 feet**	**35 feet**
Slow = 0 to 2 ft	**4 feet**	**10 feet**	**15 feet**	**20 feet**	**25 feet**	**30 feet**

Figure 1: Powerline Facilities
Error! Objects cannot be created from editing field codes.

Typically, only high-voltage (distribution and transmission) overhead powerlines are cleared of vegetation. These lines are found on the highest position of power poles. The words "*High Voltage*" are marked on poles or cross-arms carrying conductors greater than secondary voltage.

Trees growing near open wire secondary voltage wire running pole to pole shall be added to the inventory and listed for pruning if they have the potential to contact the secondary lines within 14 months of pre-inspection date (See *Table 3* for specific criteria based on growth rate and clearance.

Trees growing adjacent to service drop wires running pole to house are the responsibility of the customer. Although SDG&E does not typically clear vegetation near service drops, the customer must hire a qualified third-party contractor to safely complete the work; or alternately, contact SDG&E to reroute the line in a clear path through the tree(s).

Key steps to follow during routine Pre-inspection

- Verify you have all materials required to perform pre-inspection (open dispatch order, VMA map, field reports, forms, highlighters, flagging tape, white tree paint and Vegetation Management Department contact numbers.
- Inspect every span of all required overhead electrical power lines in a VMA.
- Open and edit every record and verify that all data fields are accurate.
- Add new or missed trees that meet the criteria for inventory tree as needed.
- Trees in the current inventory that do not meet the criteria shall be noted with the proper comments and removed from the inventory.
- Place a markup symbol on the tree icon after update to help track progress.
- Pursue removals of fast growing and memo trees.
- Fully document all refusals. Trees that are refused and non-compliant are to be reported immediately to the Pre-Inspection Supervisor.
- Document memos according to procedure (see *Memo procedures* page 35).
- Carefully inspect for reliability issues. A reliability tree may or may not be in the inventory. If a reliability tree requires immediate attention notify your Lead,

otherwise record and update the record as needed (see *Reliability Trees* page 30).

- Highlight hard copy of VMA map as you pre-inspect daily.
  -Use different color for each day
  -Include dates
  -On VMA's with multiple pre-inspectors, record pole numbers on map indicating the boundary between inspection areas.
- Communicate with Leads and Foresters.
- Report your start and end locations by phone daily to your Leads.
- Upload data daily before 6:45pm.

Non-SDG&E Facilities
Certain facilities, such as some government-owned military properties, are not maintained by SDG&E and are not reflected on VMA or GFMS maps. Special criteria are to be followed concerning these properties. Call your Supervisor or Lead if you are unsure of facility ownership. Private meters on power poles and conductors beyond the meter are the responsibility of the customer. SDG&E is not responsible for the inspection and maintenance of these lines.

Section 2: Inventory Criteria

Tree Inventory and Voltage
A tree/brush unit will be created when it meets one or more of the following conditions:

- All High Voltage (750 volts or greater): Trees that are dead or in decline and have the potential of interrupting electrical service within the current routine cycle (Reliability trees).

- All High Voltage (750 volts or greater): Green trees with indications of structural defects that have the potential of interrupting electrical service within the current routine cycle (Green Reliability trees).

- Transmission Voltage: Tree or brush is or has the potential to grow or otherwise encroach the minimum clearances required within three years of inspection date (refer to *Table 1*).

- Primary Voltage: Tree or brush is or has the potential to grow or otherwise encroach the minimum clearances required within three years of

inspection date (refer to *Table 1*).

- Stand Alone Open-Wire Secondary: Tree or brush is or will be in contact with stand-alone open wire secondary conductors within 14 months of pre-inspection date. Trees shall only be added to the system for stand alone secondary when they are listed for pruning (see *Table 3*).

- Tree or brush has branches that directly overhang conductors of 2400 volts or greater regardless of the clearance above the conductor.

The following trees/brush shall <u>not</u> be included in the tree inventory:

- trees/brush encroaching service drops only (pole to house)
- trees/brush encroaching triplex secondary (pole to pole)
- trees/brush affecting telephone or cable TV facilities.

<u>Palms</u>

To minimize the occurrence of outages during high wind conditions, palms with dead fronds and/or seed pods shall be flagged for pruning if they meet the following criteria:

- on transmission conductors and primary/mainline feeders (minimum of three wires), dead palm skirts and all seed pods will be flagged for pruning when the head of the palm is above the conductors and the trunk is within 15 feet

- palms growing above and within 15 feet of single phase primary (two wires) where the conductors have less than 3 feet of separation

- palms growing above and within 15 feet of primary where the conductors are strung vertically

- specific construction conditions (i.e., corner pole, closely-spaced underbuilt, high voltage connection wire between conductor and transformer [jumper]). Contact Lead for specific instructions.

Palms that are farther than 15 feet from the lines should not be flagged for pruning or reliability and should not be in VMS unless otherwise specified by the Area Forester.

If there is an existing icon for a palm over 15 feet to the side of the lines select the drop down comment – "***Remove from Inv-doesn't meet Inv specs*****".**

Palm skirts (circumference of dead fronds around the trunk) should only be flagged for pruning for open wire secondary if they are in contact with the conductors. If you feel you have a special situation, call your Lead.

<u>Trees that do not meet VMS inventory requirements and should be</u>

removed from the system include:

- trees where overhead facilities have been removed or rerouted
- trees removed by property owner
- trees that do not exist in the field
- trees that do not have the potential to encroach the minimum clearance requirement, or otherwise affect the facilities within 3 years of inspection date

Note: Pre-inspectors are NOT to delete trees

A tree is removed from the inventory in the MDT in the Tree Tab under *Misc Tree Comments* using the following canned comment criteria:

- *Remove from Inv - tree has been removed*
- *Remove from Inv - doesn't meet Inv specs*
- *Remove from Inv - tree not found*
- *Remove from Inv - grouped trees to clean map*

If a tree has been removed in the field, do not reuse the icon or tree ID. Each tree ID represents a specific tree which has a history that needs to be retained. It is very important to keep the information in VMS accurate.

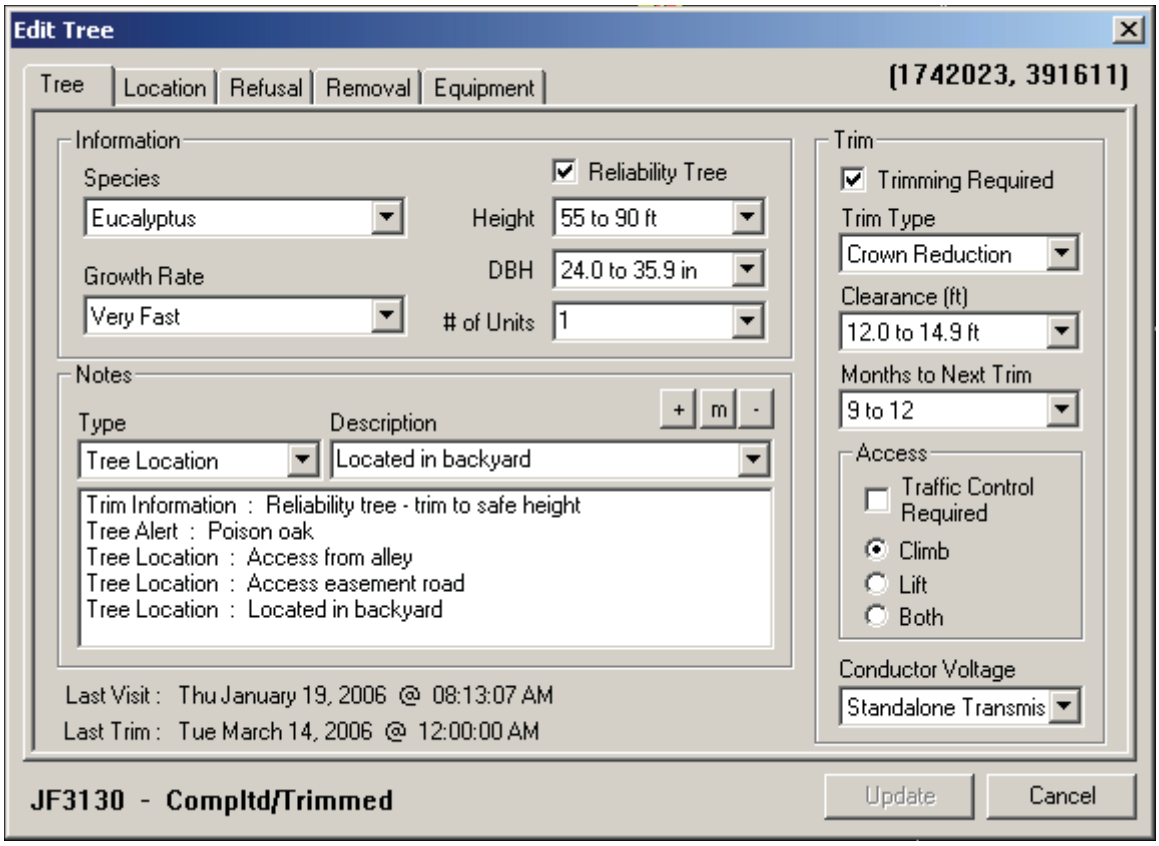
example: If GFMS shows a fan palm icon and the fan palm no longer exists in the field, do not use this icon/ID# to represent an ash tree you need to add to the system.

Maintaining Data in VMS

The pre-inspector is required to update all fields in VMS during each inspection cycle. It is critical to verify the accuracy of all fields before updating. Once you update a record you are responsible for its accuracy. The record will be recorded with the date, time, and MDT crew ID for history. The information contained in the record is very important. It will be used to identify work required for the cycle, for forecasting work in the future, and may be used for reporting to regulators monitoring compliance. If you have any questions or need clarification, contact your Lead.

Section 3: Tree Tab Information

Figure 2: Tree Tab in GFMS Record



Species

Use the drop down menu to select the correct tree species. If you are unsure of the species contact your Lead for assistance. If unsure you can temporarily enter the species by growth rate type (*very fast, fast, medium* or *slow*). See page 46 for individual species and growth rates.

Growth Rate

Each tree species has an assigned growth rate to be used as a guideline. The assigned growth rate should be changed when appropriate.

Table 5: Growth Rates

Very Fast	Over 6 feet/year
Fast	4-6 feet/year
Medium	2-4 feet/year
Slow	Less than 2 feet/year

The pre-inspector should select the rate that best reflects growth of the individual tree. Some factors to consider when determining if a change in growth rate is warranted include:

- **less growth** due to stress from drought or lack of irrigation, tree in decline, or planted in a location with poor soil

- **more growth** due to irrigation, good soil, cultural practices (i.e., heavy pruning, fertilization)

Example:

- Very fast grower: ex. eucalyptus: (6-8 feet per year x 3 years = (18-24 feet)

- Fast grower: ex. silk oak: (4-6 feet per year x 3 years = (12-18 feet)

- Medium grower: ex. California pepper (2-4 feet per year x 3 years = (6-12 feet)

- Slow grower; ex. Magnolia (0-2 feet per year x 3 years = up to 6 feet)

Note: Palms are considered “fast growers” when the heart begins to encroach the minimum required clearances near conductors. The upward trunk growth is relatively slow, averaging 1 to 2 feet per year. Once the heart of a palm is in close proximity to the conductor, however, the quick generation of leaves (fronds) will require the palm be pruned frequently or removed.

Height

Enter the range in the drop down menu that most accurately reflects the tree’s height. Accuracy in height can help the tree contractor in the field identify the correct tree to prune.

Diameter at Breast Height (DBH)

The trunk of a tree grows incrementally in girth. The DBH of each inventory tree shall be updated as necessary each inspection cycle. Measurement is to be taken using a DBH tape four feet six inches above ground level. If the tree is located on a slope, take the measurement from the upslope side of the tree. Select the correct range in the drop down field.

Units

It is essential that the number of inventory units represent actual field conditions. Unit counts need to be updated each inspection cycle because of trees removed and planted, or previous pre-inspection inaccuracies.

The number of units each icon represents is always one (1) unless the tree/brush density within the span is so high that accurate placement of graphics is not practical. If density is so high that you must cluster tree/brush icons, always use the fewest number of units possible.

The criteria for clustering trees is as follows:

- Trees must share the same species, DBH, clearance, and height range, and pruning type.

- Trees must not cross property boundaries.

- Trees must be located within the same span.

- Property or tree notes must pertain to every tree in the cluster.

- Multiple trunk trees can be clustered as long as they meet all of the requirements above.

To determine whether to list a tree as one unit or multiple units, visually inspect the base. If the trunks appear to originate from one main root system, list as one tree with multiple trunks.

If a group of trees does not meet the cluster requirements above, separate the graphics accordingly. For example, if a group of eucalyptus trees previously clustered as one unit now includes one tree with 2.1-4 feet clearance and three trees with 8-9.9 feet clearance, use the original tree icon for the tree with 2.1-4 feet clearance and change units to one. Create a new three unit icon for the trees with 8-9.9 feet clearance.

Note: Despite appearance, palms do not have multiple trunks. Palms (monocotyledons) that grow in clusters shall be counted as individual units. The exception to this is palm brush removals (see *Palm Removals* page 39).

Brush Units

Inventory trees with a DBH of less than 3 inches are considered part of a brush unit. This includes a multi-trunk tree (either from one common root or a cut stump) where no single stem is larger than 3 inches. One brush unit equals a 25 square foot pruning area (5ft x 5ft) (*i.e. 100 square feet of bamboo equals 4 brush units).* Brush units are estimated by the canopy area that requires pruning, not the square footage on the ground.

Bamboo*:* ("Brush 5ft x 5ft Bamboo") Regardless of the diameter of the bamboo, record as brush.

Palm: ("Brush 5ft x 5ft palm") Includes any palm species whose height is less than 5 feet measured from ground to the heart of the palm. Note: Brush palm records should only be added to the inventory if they are to be removed (see *Palm Removals* page 39).

Sapling*:* Special consideration is given to species with fast growth rates. A sapling is defined as a single stem whose DBH is less than 3 inches. Six saplings of the same species within one span comprise one brush unit. In the Tree Notes specify number of saplings. Note the quantity and brush

species in the system using the Misc Tree Comments in the Tree Tab under the Type drop down menu (ex. *six eucalyptus saplings*).

Figure 3: Brush Unit – Eucalyptus brush originating from old cut stump (each stem < 3"). In this example the unit count would be based on the total square foot area to be pruned or removed, not the total number of individual stems.

Use the appropriate brush code based on growth rate. For instance, a Melaleuca with a DBH of less than three (3) inches would be listed as "Brush Fast 5ftx5ft".

Brush unit categories:

- Brush Very Fast 5ftx5ft
- Brush Fast 5ftx5ft
- Brush Med 5ftx5ft
- Brush Slow 5ftx5ft
- Brush 5ftx5ft Bamboo
- Brush Fast 5ftx5ft Palm

Trimming Required

Trees that require pruning must have the Trimming Required box checked. Pre-inspector shall determine whether a tree is to be pruned within the 14 month

specification based on VMA (LRA vs. SRA), tree species, current clearance, growth rate, last prune date, conductor voltage, and previous pruning clearance obtained. Checking the Trimming Required box will update the status of the tree to LT (listed for trim).

Trim Type

Pre-inspector must select a trim type when a tree is listed to be pruned. Select the appropriate type based on which portion of the tree requires pruning relative to its position with the conductors. Trees to the side whose canopy is predominately above the lines shall be identified as "side trim". Trees whose canopy is predominately below the lines shall be identified as "crown reduction". Select "removal" for trees to be removed. Do not use any other trim type in the drop down unless directed to do so by your supervisor.

Clearance

Clearance is the estimated distance in feet between the overhead electrical conductors and the closest portion of the tree or brush. When determining clearance, always use the most conservative range. For instance, if a tree is 4 feet from the primary, select *2.1 to 4*, versus *4.1 to 5.9* ft. Remember, the tree will continue to grow and the clearance will decrease from the date of inspection.

Months to Next Trim

Use this field to estimate how many months will elapse before the tree grows out of compliance. Months to next trim does not indicate the length of time before the tree will be pruned. Months to next trim serves two purposes; 1) allows SDG&E to monitor compliance, and 2) helps forecast future workload. Some factors when considering months to next trim:

- species and potential growth rate
- last pruning and inspection date
- clearance obtained at last pruning or clearance listed during last inspection
- amount of regrowth since last prune or pre-inspection
- local site conditions, water availability
- overall health of tree

Trim Status Code Definition

- AT Assigned to Trimmers *(contact supervisor before updating)*
- CJ Connie Jo *(contact Help Desk before updating)*
- CT Completed Trim *(update as required)*
- GR Group Reliability *(contact supervisor before updating)*
- LC Listed & Clear *(update as required)*
- LR Limited Refusal *(contact Forester)*
- LT Listed & Requires Trim *(contact supervisor before updating)*
- PR Pending Removal *(contact Help Desk before updating)*
- RF Refused *(contact Forester)*

- RM Removed *(contact supervisor before updating)*
- XT Exception *(contact supervisor before updating)*

Tree Crew Access

Provide the pruning contractor the best access route to the tree. It is important that the pre-inspector pay close attention when entering and leaving a property. Remember that the contractor will be driving a large lift truck and towing a chipper. Look for anything that may restrict a crew's ability to enter or leave a property. Take into consideration heavy erosion, soft sand, saturated soil, steep grade, concrete driveways, etc. If flagging or lane closure is required to safely complete the pruning, select the **"Traffic Control Required"** box in the Tree Tab.

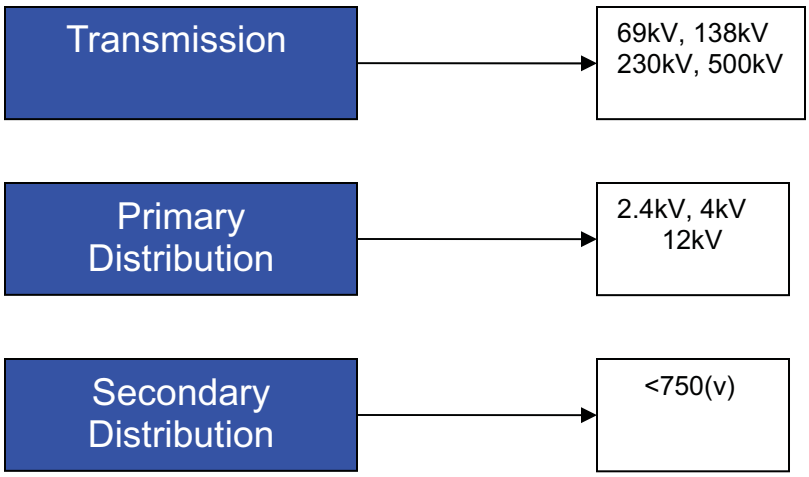
Select "Climb" if the contractor will encounter any of the following:

- narrow gates or narrow drives with no turnaround
- low tree limb or signs that overhang entry points
- bridges – some are not passable due to vehicle weight
- customer restriction of truck access

Select "Both" if the contractor's route to the tree is not impeded by any obstructions but the tree is too tall, too wide, or partially obstructed for the lift to work the entire portion of the tree.

Select "Lift" if there is no access restriction or obstruction to the portion of the tree that requires work.

Figure 4: Conductor Voltage



Underbuilt Construction Guidelines

Transmission with no other conductors on pole or towers:

- select Standalone Transmission in Conductor Voltage

Transmission with primary underbuilt:

- If the tree requires pruning for both transmission and primary conductors
    1. Select Transmission in Conductor Voltage
    2. List Clearance in relation to the transmission

- If the tree requires pruning for primary underbuilt only
    1. Select Primary in Conductor Voltage
    2. List Clearance in relation to the primary conductors

Transmission with open wire secondary underbuilt:

- If the tree requires pruning for both transmission and secondary conductors
    1. Select Transmission in Conductor Voltage
    2. List Clearance in relation to the transmission
    3. List Months to Next Trim in relation to the transmission

- If the tree requires pruning for the secondary conductors ***only***

    1. Select Transmission in Conductor Voltage
    2. List Clearance in relation to the transmission
    3. Select *Open 2ndary underbuilt-reqs trimming*

Primary distribution with open wire secondary underbuilt:

- If the tree requires pruning for both distribution and secondary conductors
    1. Select Primary in Conductor Voltage
    2. List Clearance in relation to the primary conductors
    3. List Months to Next Trim in relation to the primary conductors

Primary distribution with open wire secondary underbuilt:

- If the tree requires pruning for the secondary conductors ***only***
    1. Select Primary in Conductor Voltage
    2. List Clearance in relation to the primary conductors
    3. List Months to Next Trim in relation to the primary conductors
    4. Select ***Open 2ndary underbuilt-reqs trimming*** in the Tree Tab, under the Trim Information pull down menu

Note: The canned comment *Open 2ndary underbuilt-reqs trimming* is only to be used where open wire secondary requires pruning **and** the distribution and/or transmission overbuilt ***does not*** require pruning for the cycle.

Tree Tab Notes

Tree tab notes are specific to the tree and are not copied to all records listed with the same property. It is important that the pre-inspector update tree notes for all records during each inspection. Notes originating from a previous inspection may no longer apply, or may require updating. If notes are no longer accurate, the pre-inspector should remove them.

Example:

- Trim Information drop down states "*Overhang requires trim*". If the tree has been cleared of all overhangs the comment should be removed.
- Tree Alert drop down states "*Poison oak*". If the poison oak is no longer an issue the comment should be removed.

Work Requirements

The following conditions are considered part of routine pruning maintenance. Additional canned or miscellaneous comments may need to be added by the pre-inspector to the tree record using the pull down menus.

Direct Overhang

As a general rule, all inventory trees that have limbs directly overhanging the vertical ground to sky plane above primary distribution and transmission conductors shall be listed for pruning. Use the canned comment, "*Remove direct overhang*". An exception to this rule would be when a customer has refused an overhang to be removed and the Area Forester has entered these notes into the system. Follow the instructions in the record on how to proceed with the record.

Figure 5: Direct Overhang – Oak branch crossing vertical ground-to-sky plane

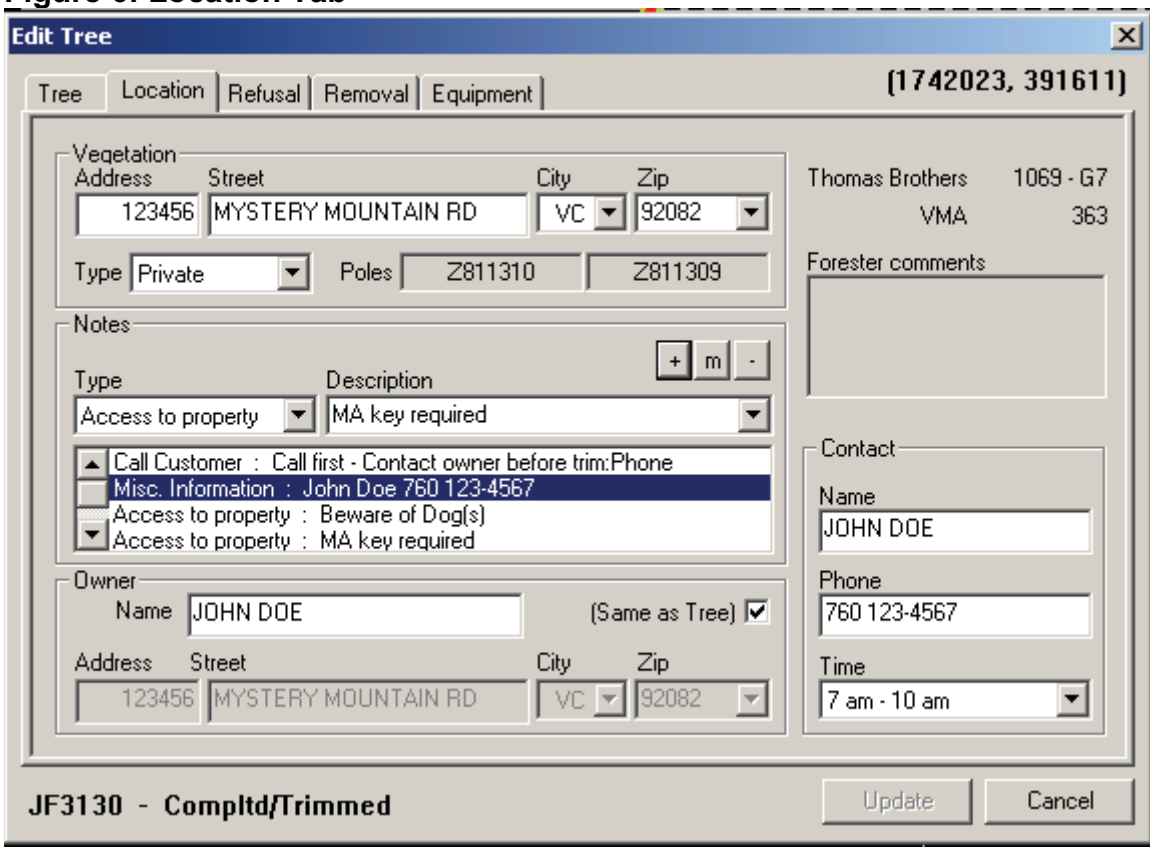
If you encounter trees with **old growth overhang** (limbs greater than 6 inches in diameter that cross the ground to sky vertical plane) and there are no notes in the system, contact the Area Forester for instructions on how to proceed with the record.

Deadwood
Dead limbs or branches that have the potential for detaching from the tree and interrupting overhead facilities (excluding stand alone open-wire secondary and triplex wire), shall be listed for pruning using the drop down comment "*Remove dead wood*" in the Tree Page under Trim Information. This comment may be used for reliability and non-reliability trees as conditions require.

*Always use the drop down canned comment when possible. **Do not alter canned comments** except to add date and initials where required. If the appropriate comment is not in the drop down menu create a miscellaneous comment.

Section 4: Location Tab Information

Figure 6: Location Tab



Address Guidelines

Within VMS both the Tree Trim and Pole Brush program share the location page. Any changes to this page will affect every tree and pole sharing the same property number, street name, city and zip code. Attention to detail is paramount when entering information. If a misspelling of a street name or a street number exists and you need to edit, understand that the change will occur to all records that carry that same street name spelling and street number. Before you make a change to an address take the time to verify that no other records are going to be affected besides the one(s) you intend to change.

The Area Forester, forester assistant or the Lead will at times edit sensitive or customer information. These updates are important to make all of SDG&E's Vegetation Management personnel and contractors aware of properties with special work requirements. Customer notes need to be preserved to ensure SDG&E can get the work done as efficiently as possible. Take the time to identify correct address and owner information (name and number) for each property. This will improve the contractor's productivity and notification, and will help reduce the number of future refusals and/or sensitive customers.

Locating Customer Address

- We need the actual physical address for a property. This means the number and street name in the Customer @ Transformer box, the number on the mailbox, or the number on the house where the tree/pole is located. No additional spaces, punctuation marks or fractions allowed. If the property contains one of the following (1245A, 1245.5, 1245 1/2, or if the structure has an alpha character) insert the unique property address in the Misc. Comments in the Tree Page.

- The information in the Customer @ Transformer box is considered to be accurate, but confirmation in the field is required. If the Customer @ Transformer has a Point Loma address for the customer and you are on Mt. Laguna, obviously the address is the billing address and not the physical address where the tree/pole is located. If the Customer @ Transformer address is incorrect you will need to get the number from the house or mailbox. If there is no posted address on the house or mailbox you can also enter the meter number using the "Go to Customer" to get the correct address. If the meter does not come up with a match you will need to use a Matrix address (defined on the next page).

- Street names shall be spelled out and only approved alpha characters will be used for street, road, highway etc (see *Table 6*). Example: HARBISON CANYON RD or OLD HWY 80. For numbered streets always use the number and proper suffix; Example: 2nd, 3rd, 4th, 21st etc.

Remember, no punctuation marks or additional spaces are allowed in the street name. Every additional space or mark will make the property separate from the actual address. All addresses and street names must be exactly the same in order to share important property/Location Page notes. Always check the Customer @ Transformer box to make sure the street name in the system is correct. You may come across properties with driveways that are along a street different than the actual street address (ex. a driveway on Community Building Rd with an address of HWY 94). Note the correct address and street in the Address/Street field (HWY 94) and note in the Misc. Information drop down in the Location Page: *"Access property from Community Building Rd"*.

Table 6: Approved Street Alpha Characters

AVE	Avenue	**I 15**	Interstate 15
BLVD	Boulevard	**Ln**	Lane
CIR	Circle	**PKWY**	Parkway
CT	Court	**RD**	Road
DR	Drive	**ST**	Street
FWY	Freeway	**TERR**	Terrace
HWY	Highway	**TRL**	Trail

An example of what you may come across is a road that has more than one name. Example: HWY 76 also known as (AKA) Pala Road. Use the street that the Customer @ Transformer box indicates, (ex: 243 HWY 76), and note in the Location Page under Misc. Information: *AKA Pala Rd*.

Use Customer @ Transformer to copy and paste the customer name and phone number into the Location page under Misc. Information. If there is an existing customer name and number in the Location Page validate the name and phone number from Customer @ Transformer.

Remember, the last person to update a record owns the record and is responsible for the accuracy of the location and the notes.

Matrix Address

If no address or customer information can be found follow the matrix procedure. Pre-inspector shall use the closest physical address (number) and add an "X" to the end of the number to identify the location. Example: 3036X Oak Dr. Pre-inspectors may use this matrix address for several trees or in some cases several spans until a closer posted address is reached.

Directions for all trees at a matrix address shall be added in the Tree Tab under the Tree Location pull down menu. Direction notes entered into the Tree Page should be cardinal only (N, S, E, W), and any physical landmarks used for reference must be stationary (i.e., mailbox, call box, bridge, or a starting point that is easy to find). If a posted address is not readily observable, notes should be entered to orient to the location.

Pay close attention to data populating or disappearing from the Location Page notes section. This would signify that the same matrix address is being used somewhere else. If this occurs you need to cancel out and select another matrix number address. Remember that when you remove notes in the Location Page for the tree you are updating, it will erase the note from all tree and pole records with that address. If in doubt call your Lead before deleting a note from a record.

Ownership Type

When entering property information for trees, select the appropriate ownership from the drop-down menu:

- Private
- City
- County
- State
- Federal
- Cal Trans
- Trolley
- BIA (Bureau of Indian Affairs)
- BLM (Bureau of Land Management)
- US Forest Service
- CDFG (California Dept of Fish & Game)

VMS will allow one ownership type for trees within each property boundary. If there are multiple ownership types for the inventory trees within a single property boundary, select the priority from the following table.

Table 7: Ownership Priority

Possible Combination	Priority
Private/City	Private
Private/County	Private
Caltrans/City	Caltrans
Caltrans/County	Caltrans
Caltrans/Federal	Caltrans
Trolley/City	Trolley
State Park/Federal	State Park
State Park/County	State Park
Federal/County	Federal
BIA/County	BIA

The ownership field is tied to the address and will apply to all trees that share the same address. Enter the lower priority ownership in the Tree tab under the pull down Tree Location so that the secondary municipality or agency is identified.

Check VMA maps and Thomas Brothers Guide for boundaries. Call your Lead with any questions you may have regarding ownership.

Pole Numbers

The MDT is always right when it comes to pole numbers. When updating, creating a tree record, or copying a tree within a span, always verify your pole numbers are correct. On occasion the physical tag on a pole is not correct. If a pole is numbered incorrectly in the field you must add a note under the Tree Location in the Tree Page (e.g., *Pole 1 is P21346 not P21364*).

When creating a tree you will be prompted to snap to pole one and pole two. Be sure the tree icon is placed in its correct location relative to the selected poles. When updating a tree that has been copied from one span to another where the pole numbers are incorrect follow these instructions:

1) Go to VM (drop down menu)
2) Select Trees
3) Select Change Poles
4) Snap to tree
5) Snap to first pole (no preference)
6) Snap to second pole

Location Tab Notes

Notes in the location tab carry over to all tree and pole records sharing the same property address. With the exception of matrix addresses, all trees/poles in the VMS System are required to have customer information and notes that pertain to the property. Customers move, phone numbers change, and some properties require special instruction, so updates are necessary to keep current with customer information. Do not remove refusal or sensitive customer information before speaking with your Lead or Supervisor. Forester notes should never be removed by a pre-inspector unless directed to do so by the Area Forester.

Below are some examples of location tab notes:

- Customer Name (First & Last), Phone
  Example: John Doe 858 277 5860

- Company Name/Business/Ranch-Misc. Comments, Phone
  Example: John Doe Enterprises or Bar None Ranch 858 555 0001

- Property specific notes-Misc. Notes
  Examples: Gate Code 12345
  Schlage key required
  Private lock call for access

***Reminder: Never modify a canned comment**

Table 8: Special Characters

Acceptable Characters	Unacceptable Characters
Dash (-)	(!) (@) (#) ($) (%) (^)
Backslash for dates (/)	(&) (*) (() ()) (+) (=) (~)
	(`) ([) (]) ({) (}) (\) (|) (;)
	(:) (‘) (“) (<) (>) (,) (?)

Owner
If the property owner is different than the person inhabiting the home include both names and contact numbers under Miscellaneous Information in the Location Page (ex. *Tenant – Bob Jones 619 555 1234; Owner – Jane Smith 760 555 8842*).

Customer Contact
If a customer is present during pre-inspection confirm the contact information fields for accuracy and update as required. Include date and pre-inspector initials if owner information does not match transformer information.

Section 5: Reliability Trees

Hazard or reliability trees pose a threat to the safe and reliable delivery of electricity. Identifying hazard trees that have the potential to fail completely or drop limbs onto powerlines is critical to Vegetation Management operations. Trees that uproot or break out and fall into overhead utility lines can injure people and property, cause fires, power outages, power surges, and other damage to electrical facilities. Reliability trees may be located inside or outside of the utility right of way, and may or may not require pruning for compliance with clearance requirements.

A majority of tree-related outages that occur in the utility right-of-way are the result of tree or limb failure, not tree growth. A common cause of outages is palm fronds or seed pods that detach and blow into conductors. When hazards are identified the pre-inspector shall select check both the reliability and trimming required box in the Tree Tab. The proper reliability canned comment(s) located under Trim Information in the Tree Tab, or a Miscellaneous Tree Comment must also be entered. All reliability trees shall be marked with a white tag stapled to the tree that includes the tree ID, pre-inspector name, and pre-inspection date.

Reliability trees are not pruned or removed near stand-alone open wire secondary or triplex wire unless directed by the Pre-inspection Supervisor or Area Forester. Contact your Lead if clarification is required.

Tree Hazard Checklist

Consider these factors when evaluating trees for reliability:

- Is there a target? Can the hazard tree affect the electrical facilities?
- Are there any dead and/or detached branches in the tree that could fall and strike the pole or high voltage line?
- Does the tree have visible cavities or rotten wood along the trunk or in major branches?
- Are there indications of disease (fruiting bodies, wood rot) at the base or along the tree branches?

- Are there visible cracks or splits in the trunk or where branches are attached?
- Have any branches fallen from the tree that may indicate structural problems?
- Have adjacent trees fallen or died?
- Has the trunk developed a strong lean?
- Are there multiple vertical branches originating from one point that may indicate weak attachment?
- Are there narrow-angled branch crotches that may indicate included bark?
- Have the roots been excessively pruned, or damaged by grade change, pavement installation, sidewalk repair, or trench digging?
- Has the site recently been changed by construction, wind or water erosion, saturated soil, raising the soil level, lawn installation?
- Have the leaves prematurely developed an unusual color or size?
- Have adjacent trees been removed creating the potential for windthrow (exposure to wind causing tree failure)?
- Has the tree been topped or otherwise heavily pruned?
- Any indication of decline, disease, or structural damage from insect borers?

Figure 8: Potential hazard tree showing evidence of poor pruning practices, branch dieback, and overall decline.

Figure 9: Example of green reliability tree exhibiting extensive trunk cracking.

Figure 10: Potential green reliability oak exhibiting evidence of included bark and interior rot.

Figure 11: Interior rot at base of eucalyptus that may lead to future failure.

Figure 12: Reliability trees may not always be readily observable. In the example below, the tall, slender eucalyptus tree has a slight lean and may be well clear of the electrical facilities during normal weather conditions.

Figure 13: Minutes later the winds pick up and the tree may now pose a potentially hazard. Keep in mind pre-inspection must anticipate tree and weather conditions through all seasons including high winds, rain, and snow.

Section 6: Memo Procedures

Memo trees are those that are non-compliant with minimum clearance requirements *and/or* fit the Vegetation Management criteria to be pruned within a priority timeframe. Memos are classified *same day*, *next day,* or *group*. The priority timeframe for pruning memo trees is based on voltage, clearance, and location (SRA vs. LRA VMAs). ***All* memos shall be documented on a Memo Sheet.**

Same Day Memo

- Tree crew dispatched that day if called in to Help Desk by 12:30pm.
- Same day memo calls received after 12:30pm are usually issued the following day. If same day prune is absolutely necessary after 12:30pm, pre-inspector shall notify Area Forester.
- Help Desk radio is shut off after 3:30pm; all calls after 3:30pm shall be made to landline number (858) 654-8608. If no answer, leave detailed voicemail regarding memo.

Next Day Memo

- Same day memo tree found after 12:30pm. Tree crew will be dispatched to complete pruning on the business day following inspection.

Group Memo

- Trees are completed by pruning contractor within two weeks of being issued.

Primary Voltage Memos:

State Responsibility Area (SRA) VMAs

- Trees in continuous contact with primary conductors shall be called in to the Help Desk as a same day memo. Document on Memo Sheet.

- Trees with intermittent or wind contact with primary conductors shall be called in as a next day memo. Document on Memo Sheet.

- Trees with less than 18 inches of clearance from primary conductors, but not in contact, shall be documented on a Memo Sheet and turned in bi-weekly to Help Desk to be issued as a group memo. Group memo trees are *not* to be called in to the Help Desk unless they are to be pruned with same or next day memo trees located on the same property. Contact Area Forester for instruction.

Local Responsibility Area (LRA) VMAs

- Trees in continuous contact with primary conductors shall be called in to the Help Desk as a same day memo. Document on Memo Sheet.

- There are no group memo trees in LRA VMAs for primary voltages.

Transmission Voltage Memos (SRA & LRA):

Trees identified near transmission conductors that do not meet the minimum arc clearance requirements per NERC FAC 003-01 (IEEE 516-2003) shall be called in to the Vegetation Management Help Desk as a same day memo. A tree crew will be dispatched immediately to correct the hazard. Minimal arc clearances for transmission are defined as:

- **2.9 feet for 138kV**
- **5.1 feet for 230kV**
- **14.7 feet for 500kV.**

Trees identified near transmission conductors that meet the minimum arc clearance requirements but are within the following clearances shall be documented on a memo sheet as a group memo and turned in bi-weekly to the Help Desk. A tree crew will be dispatched to prune the tree(s) within two weeks.

Group memos shall be issued for trees within:

- 6 feet from 69kV conductors
- 10 feet from 138kV and 230kV conductors
- 20 feet from 500kV conductors

Table 9: Memo Types

Conductor Voltage	Distance from Tree	Type of Memo
Primary (SRA & LRA)	0	Same day
Primary (SRA only)	< 18 inches	Group
69kV and138kV (SRA & LRA)	3 feet or less	Same day
230kV (SRA & LRA)	5 feet or less	Same day
500kV (SRA & LRA)	15 feet or less	Same day
69kV (SRA & LRA)	6 feet	Group
138kV & 230kV (SRA & LRA)	10 feet	Group
500kV (SRA & LRA)	20 feet	Group

Processing a Memo

- All Memo Trees shall be flagged with green tape and labeled with tree(s) ID.
- All memos shall be documented on a Memo Sheet and turned into SDG&E's Vegetation Management Help Desk.
- Pre-inspector shall make attempt to notify all memo tree customers. If the

customer is not at home a door hanger or voice message shall be left.

- In the tree record under, *Misc Tree Comments*, note "*Memo submitted by*" and include the following:
  - Your initials
  - Inspection date of memo.
  - *Example "Memo submitted by JW 8 13 06".*
- Pre-inspector shall pursue removals on all memo trees that fit removal criteria, and document the attempt using the canned comment, "*Left removal request*" including date and initials.

When calling in memos, pre-inspector shall identify the tree ID alpha characters using the International Phonetic Alphabet.

Table 10: International Phonetic Alphabet

A	**Alpha**	**N**	**November**
B	**Bravo**	**O**	**Oscar**
C	**Charlie**	**P**	**Papa**
D	**Delta**	**Q**	**Quebec**
E	**Echo**	**R**	**Romeo**
F	**Foxtrot**	**S**	**Sierra**
G	**Golf**	**T**	**Tango**
H	**Hotel**	**U**	**Uniform**
I	**India**	**V**	**Victor**
J	**Juliett**	**W**	**Whiskey**
K	**Kilo**	**X**	**Xray**
L	**Lima**	**Y**	**Yankee**
M	**Mike**	**Z**	**Zulu**

Section 7: Removal Guidelines

Tree removals are an important component of vegetation management. Removals reduce the need for repeated pruning, reduce the frequency of property visits, reduce overall costs, and help ensure regulatory compliance.

Pre-inspector should pursue removals of fast and very fast inventory trees and palms. For removals of green and dying reliability trees, work with the Area Forester, forester assistant, or your supervisor to determine appropriate candidates and criteria.

- Confirm property ownership of all trees to be removed. If the tree sits on a property line <u>all</u> property owners must sign the removal card.

- Fill out all portions of removal card including quantity, species, address, VMA#, Tree ID, Crew type, Start/Stop Poles, Ownership. Make sure exact DBH of each tree (with the exception of palms) is written on the card. Include pre-inspector name on top left corner of card.

- Property owner must sign card. Make sure printed name and phone numbers are legible. If removing more than 5 trees on the same property, you must use a "*Tree Removal Authorization List Continued*" form. If using a continued list, owner must sign both yellow card and continued list.

- Palm removals are issued to a separate contractor. All palm removals must be documented on a separate removal card from other species.

- Removal of trees 24" DBH or greater, with a height of 30 feet or taller, growing to the side of the lines, will be worked on T&E (time and equipment) and requires Area Forester approval. Approval must be noted on bottom of card.

- Removal of trees 36" DBH or greater growing directly under the lines will be worked on T&E and requires Area Forester approval. Approval must be noted on bottom of card.

- Removal of trees less than 36" DBH growing under the primary conductors will be performed on a unit basis. Area Forester approval is *not* required. Pre-inspector must indicate this on the card with the comment "*T&E not applicable*".

- Explain removal process to owner – wood over 3 inches in diameter will be cut into manageable lengths and left on site (*not* stacked); branch debris will be removed; stumps will be cut as close to the ground as is safely possible; resprouting stumps will be treated with an EPA-approved herbicide; stumps will *not* be ground. **Clearly set the expectation for the customer what will and will not occur during cleanup**.

- Replacement trees require Area Forester approval. If replacements are offered, indicate replacement species, quantity (up to 3), and size (up to 15 gal.) on removal card. Replacements species are chosen from the SDG&E approved list (*see Figure 19*). Explain to owner that he or she must contact the Area Forester after trees are removed to initiate replacements. SDG&E does not plant replacement trees.

- Paint a small white "X" or dot at base of tree(s) to be removed.

- Enter DBH in the Tree Tab – Removal, "*DBH is* ___". Measure DBH to the nearest whole inch of diameter attained. Round down to the nearest whole number (ex: a tree measuring 12.7 inches diameter should be entered in the comments as "*DBH is 12"*, not 13 inches). Make sure the DBH specified matches the DBH range selected.

- Enter ticket ID number in the tree record removal tab. On properties with multiple removals, each tree record with the same ticket ID requires a sequential number be entered (i.e., 345479**-1**, 345479**-2**, 345479**-3**) in the removal tab. Enter owner name and number in the removal tab.

- Leads are to turn in removal cards and *Tree Removal Authorization List Continued* sheets to SDG&E Help Desk.

Note: If a tree is a memo removal, note on the top portion of the removal card "*MEMO"*. Removal cards for memo trees must be turned in immediately for same and next day memos, or with memo sheets for group memos.

Palm Removals - Species Definition and Removal Ticket Documentation

Special consideration is given to the removal of palms. In addition to mature palms, VMS allows for the removal of brush and small palms that would otherwise not be included in the inventory because of size. Pre-inspectors can pursue the removal of brush and small palms under certain conditions.

The removal of brush fast and small palms should be pursued on those properties where full size palm removals are to take place*. It is otherwise not necessary to inventory brush or small palms in the MDT.*

The cost of palm removals is based on species and height. Correct species identification and documentation is essential.

GFMS Palm Species Code:

- ***Palm-Fan*** - *all* fan palms with the exception of California Fan Palm
- ***Palm-Fan California / Filifera*** - California Fan Palm (*W. filifera)* only
- ***Palm-Feather*** - *all* feather palms with the exception of Date palms
- ***Palm-Feather Date / Phoenix*** - *all* date palms
- ***Brush Fast 5x5 Palm*** - *all* palm species whose trunk height is less than 5 feet measured from the ground to where the new fronds emerge.
- ***Small Palm* (*no species code in GFMS*)** - *all* palm species whose trunk height is 5.1 -15 feet measured from the ground to where the new fronds emerge. Use species code *Palm-Fan* or *Palm-Feather* code as appropriate.

Removal Ticket Documentation

- All palm removals shall be entered on a removal ticket separate from all other non-palm removals.

- At the top of the removal ticket where species is entered, use the generic word *palm* for all species.

- Enter Thomas Bros map # on top right hand corner of removal ticket.
- Each palm removal shall be documented in the comments section of the removal ticket with the specific identifier word next to the tree ID**:**

Species	Identifier
• ***Palm-Fan***	***fan***
• ***Palm-Fan California / Filifera***	***filifera***
• ***Palm-Feather Date / Phoenix***	***date***
• ***Palm-Feather***	***feather***
• ***Brush Fast 5x5 Palm***	***brush***
• **small palm** (No species code in GFMS)	***small***

Figure 14: Example of Palm Removal Ticket

Ex: Authorization to remove 6 palms including: 1 palm (4 feet tall to the heart), 1 fan (12 feet tall to the heart), 1 California fan, 2 Queen, 1 Canary Island Date.

Document the removal ticket as**:**

SDG&E EXAMPLE

Ticket I.D. Nº 357907

A Sempra Energy utility

SDG&E - Vegetation Management Program

TREE REMOVAL AUTHORIZATION

TB 1149-B7

As the authorized agent, I John Smith *(print name)* do hereby authorize SDG&E to remove 6 *(quantity)* palm *(species)* located at 123 Main St. San Diego, 92117 *(property address, city, & zip code)*. This work will be done by SDG&E **at no cost to me.** I understand that; (1) wood over 3 inches in diameter will be cut, whenever practical, into a manageable size and left at the site, unless requested otherwise, (2) branch debris will be removed from the site by SDG&E, (3) SDG&E will not grind/remove stumps.

Signature: _____ Date: _____

Phone No. _____ (hm) Phone No. _____ (wk)

VMA # 220 Tree I.D.# AB12 (brush)

Crew type: lift/climb (circle one) Start pole# P12345 Stop pole # P123456

Ownership: private/city/county/state/federal (circle one)

Comments: AB13 (small) AB14 (filifera) AB15 (2 feather) AB16 (date)

FORM 111-04152 1/99

Palm Removal Documentation in GFMS

- use appropriate codes as defined above
- for *small palm* removals use species code *Palm-Fan* or *Palm-Feather* code as appropriate
- for palm removals, enter trunk height to base of fronds
- it is not necessary to specify the DBH on the removal ticket or in the comments section of the tree record

All palms with fronds that sweep out of compliance are potential cycle busters and shall be pursued for removal.

Section 8: Refusals

Customers who refuse tree pruning can delay schedule, jeopardize compliance, require extra time and effort to resolve, and are costly to manage. Pre-inspection contractor shall attempt to resolve customer refusals unless otherwise instructed by the Supervisor or Area Forester.

Full refusal tree or pole records have an "X" over the icon in GFMS. This indicates a historic refusal location or one currently pending. In some instances all records on a property are listed as full refusals because of circumstances requiring special attention. Pre-inspectors must pay close attention to all notes relating to a refusal property.

Note: All trees will be pruned if they become non-compliant with the power lines.

Potential reasons for refusals:

- The property owner has been verbally or physically hostile to SDG&E or contractors.
- The property owner refuses to allow SDG&E to complete the work according to required clearances and/or pruning specifications.
- The property owner indicates the desire to prune the tree(s) themselves or by a third party contractor.
- The customer is a historical refusal and the Forester monitors the status of the tree(s) annually. The Forester will update the tree data during the pre-inspection cycle and schedule the work as necessary.

Procedure for Refusals Initiated During Pre-inspection:

If a customer communicates the refusal to allow pruning, the pre-inspector shall make the attempt to resolve. Gather all pertinent information from the customer, actively listening to and acknowledging the customer's concerns and complaints. If unable to persuade the customer to allow pruning or brushing, the pre-inspector shall:

- Communicate the legal and safety requirements and subsequent contact steps that will be taken by pre-inspection and SDG&E supervisors.
- Provide a hard copy of the SDG&E *Refusal Fact Sheet* and fully document the refusal on the *Vegetation Management Services Refusal Form*.

- Forward the refusal to the Lead for further contact.

Refusal Updates in MDT:

- When you come across a FULL REFUSAL open the record, read and follow the instructions in the refusal, location, and tree tab.
- If the instructions are unclear or there are no refusal notes, call your supervisor or the Area Forester for clarification.
- Pre-inspector is required to update the clearance of the tree(s) unless instructed not to by the supervisor or the Area Forester.
- DO NOT erase or delete any sensitive, difficult or refusal customer notes or information.
- DO NOT change the address or street name on any tree ID with sensitive customer notes.
- DO NOT skip over full refusal properties or trees without opening the tree and following the instructions.
- If a tree ID is noted on the wrong address contact your Lead about the needed correction.

Call your Lead or SDG&E Supervisor with any questions or concerns about refusal situations.

Major Woody Stems

Major woody stems (MWS) are tree trunks or tree limbs that are exempted from the minimum vegetation clearance requirements in G.O. 95, Rule 35 and PRC 4293. To qualify as an exemption, the trunk or branch must be of sufficient strength and rigidity to prevent it from encroaching within 6 inches of distribution voltage conductors, and must meet all requirement criteria outlined in the *MWS Exemption Form* (see Fig. 22). Major woody stems must be reviewed by a qualified ISA Certified Arborist annually and documented on a *MWS Exemption Form*. All MWS must be recorded in the Tree Tab-Tree Alert field using the canned comment, *Major Woody Stem*.

Figure 15: Major Woody Stem

Section 9: Icon Placement

Placing Trees and Brush Units

- Place Tree and Brush icons accurately in the MDT.
- Position each icon correctly within the span relative to SDG&E facilities. In some areas the facilities map in GFMS does not accurately reflect actual conditions in the field.
- Place icons as they are in relation to the facilities, not the property lines. Add a note to Tree Location to explain the discrepancy.
- Provide accurate and concise directions to the tree to help the tree contractor locate in the field.
- When several trees exist in a span, place them as accurately as possible and avoid overlapping graphics and text. The tree ID must always be legible.
- Avoid clustering trees unless high tree density requires it.

For high tree density, refer to *Units* (page 18). Keep in mind that the contractors need to be able to read the Tree ID#'s on the VMS map.

If SDG&E facility locations on the map do not accurately reflect their position in the field, place the tree graphic relative to the facility and add an explanation selected from Notes/Type and Description drop-down menus to explain.

SDG&E periodically updates the GFMS map on the MDT. The new map file may include the addition of new line extensions and the removal of lines that no longer exist. The position of SDG&E facilities may be updated as well. This may offset previous tree icon placement. When this occurs, the tree icons will need to be moved to their proper location in the appropriate span. Contact field supervisor for further directions.

In some cases new overhead facilities will not be reflected in GFMS. Place the tree graphics as accurately as possible using street and/or property delineation, and add an explanation selected from Notes/Type and Description drop-down menus. Make sure to provide accurate and concise directions to inventory trees near new lines since the tree crew will not have the overhead facilities drawn on their maps.

Section 10: Updating VMA Map

VMA Map Updating

Hardcopy VMA maps are provided to pre-inspectors to track progress and document completion in each VMA. Each pre-inspector is responsible to patrol every span of overhead transmission, primary, and stand alone secondary

conductors, including any new line segments within the assigned VMA.

1) Use highlighters to indicate the progress of each day. Use different colors for different days and write the date next to each day's work.

2) Ensure all border sections between pre-inspectors in the same VMA are patrolled in their entirety. Write pole numbers on the map indicating start and stop position of each bordering section. **No missed or overlapped inspections**.

3) Write complete name and the "start date" and "end date" in the space provided on the VMA map.

4) Use the map to write down addresses or phone numbers as needed.

5) Add any new construction or line extensions to the VMA map relative to existing circuits.

6) Add gate codes and other useful information as a reference for subsequent inspections.

7) VMA maps are to be handed in to your Supervisor and checked for completeness and accuracy before being turned in to SDG&E.

8) Pre-inspection contractor shall complete and sign a VMA certification sheet upon completion of the VMA and turn in to the SDG&E Pre-inspection Supervisor.

Section 11: Pre-inspector Call In

All pre-inspectors shall call in their nightly location log Monday-Friday before 7:00 p.m. The pre-inspector shall provide the following information:

1) VMA
2) estimated # of days to complete the VMA
3) last tree ID
4) total hours worked
5) the following day's starting tree ID
6) the following day's starting property address
7) the following day's starting Thomas Brothers map #

- When working in more than one VMA in a workday, the pre-inspector must specify the total hours worked in each of the VMAs.
- Pre-inspectors are to call their Lead before leaving their VMA during working hours.
- The Lead must authorize time spent out of the VMA during normal work

hours.

- Pre-inspection Leads are to call the Area Forester the first day in a new VMA to notify that pre-inspection has begun.

Section 12: Tree Growth Rates – Very Fast to Slow

Each tree's growth rate will be affected by the specifics of the site, the tree's health, and pruning history.

Very Fast = > 6 ft/yr **Fast = 4-6ft/yr**	
Ash	very fast
Cottonwood	very fast
Eucalyptus	very fast
Mulberry	very fast
Willow	very fast
Ailanthus	very fast
Avocado	fast
Bamboo	fast
Jacaranda	fast
Melaleuca	fast
Palm (Fan)	fast
Palm (Feather)	fast
Poplar	fast
Silk Oak	fast
Sycamore	fast
Tamarisk	fast
Walnut	fast
Acacia	medium
Alder	medium
Brisbane Box	medium
Camphor	medium
Carob	medium
Carrotwood	medium
Casuarina	medium
Catalpa	medium
Cherry	medium
Chinaberry	medium
Citrus	medium
Coral	medium
Eugenia	medium
Ficus	medium
Floss Silk	medium
Hackberry	medium
Locust	medium
Maple	medium
Mesquite	medium
Myoporum	medium

Medium = 2-4 ft/yr **Slow= 0-2 ft/yr**	
Pecan	medium
Pepper (California)	medium
Pine	medium
Pittosporum	medium
Plum	medium
Podocarpus	medium
Privet	medium
Redwood	medium
Rubber	medium
Sumac	medium
Tulip	medium
Aspen	slow
Bay	slow
Birch	slow
Bottle	slow
Bottlebrush	slow
Cow Itch	slow
Crape Myrtle	slow
Cypress	slow
Deodar Cedar	slow
Fir	slow
Gingko	slow
Italian Cypress	slow
Juniper	slow
Koelreuteria	slow
Magnolia	slow
Mimosa	slow
Monkey Puzzle	slow
Italian Cypress	slow
Oak	slow
Oleander	slow
Palo Verde	slow
Pepper (Brazilian)	slow
Pistache	slow

Olive	medium
Orchid	medium
Pear	medium

Section 13: Vegetation Management Areas

= LRA **= SRA**

210	Point Loma	**357**	Lake Wohlford
212	Mission Bay	**358**	Valley Center East 1
215	La Jolla	**359**	Valley Center West 1
220	Mission Valley	**360**	Pauma Valley 1
221	Mira Mesa	**361**	Pauma Valley 2
302	San Marcos	**362**	Jesmond Dene
304	Escondido North	**363**	Hidden Meadows
305	Escondido Central	**364**	Couser Canyon 1
306	Escondido South	**365**	Ramona West
309	Rancho Bernardo	**366**	Rincon
310	Poway North	**367**	Pine Hills 2
311	Poway South	**368**	Pine Hills 1
312	Fallbrook West 1	**369**	Harrison Park
313	Fallbrook West 2	**370**	Palomar Mtn 2
314	Fallbrook West 3	**371**	Warner Springs
350	Lake Hodges South	**372**	Borrego
351	Lake Hodges North	**373**	Mesa Grande 2
352	San Pasqual	**374**	Mesa Grande 1
353	Highland Valley	**375**	Palomar Mtn 1
354	Ramona South 1	**376**	Lilac 1
355	Ramona East 1	**377**	Whispering Pines 1
356	Ramona North	**378**	Pala
379	Rainbow 1	**403**	Lemon Grove / Spring Valley

380	Pala Mesa	405	La Mesa West

Section 13: Vegetation Management Areas cont.

= LRA = SRA

381	Winterwarm	406	La Mesa East
382	Gopher Canyon East 1	408	Mount Helix
383	Bonsall 1	410	El Cajon West
384	Fallbrook East 1	412	Rancho San Diego
385	De Luz 1	414	El Cajon East
386	Santa Ysabel	416	Santee
387	Gopher Cyn East 2	420	Lakeside
388	Rainbow 2	450	Blossom Valley 1
389	De Luz 2	451	Eucalyptus Hills 1
390	Fallbrook East 2	452	San Vincente
391	Valley Center East 2	453	Barona
392	Valley Center East 3	454	Dehesa
393	Ramona South 2	455	Crest
394	Ramona East 2	456	Singing Hills
395	Courser Canyon 2	458	Alpine
396	Lilac 2	460	Jamul West
397	Whispering Pines 2	462	Potrero
398	Bonsall 2	463	Jamul East
399	Valley Center West 2	464	Boulevard
400	Allied Garden / San Carlos	465	Barrett Lake
466	Buckman Springs 1	606	Vista North 1
467	Descanso	607	Oceanside North 1
468	Viejas	610	Vista South

469	Mount Laguna	**611**	Oceanside South
475	Blossom Valley 2	**614**	Encinitas South 2

Section 13: Vegetation Management Areas cont.

= LRA **= SRA**

477	Eucalyptus Hills 2	**616**	Oceanside North 2
479	Buckman Springs 2	**623**	Encinitas North 2
510	Mission Hills	**624**	Vista North 2
512	State College	**651**	Rancho Santa Fe South 1
513	Center City	**652**	Rancho Santa Fe North 1
514	East San Diego	**653**	Rancho Santa Fe North 2
518	National City	**654**	Buena Vista 1
519	Paradise Hills	**655**	Gopher Canyon West
520	Chula Vista West	**670**	Buena Vista 2
521	Chula Vista East	**673**	Rancho Santa Fe South 2
527	Coronado -Imp	**674**	Rancho Santa Fe South 3
552	Bonita	**701**	San Clemente
553	Otay Mesa	**702**	Dana Point 1
601	Del Mar	**703**	San Juan Capistrano
602	Solana Beach	**707**	Laguna Hills
603	Encinitas South 1	**708**	Dana Point 2
604	Encinitas North 1	**752**	Ortega
605	Carlsbad		

Section 14: Approved Abbreviations

Abbreviation	Translation
1st, 2nd, 3rd, 4th, etc…	First, second, third, fourth
1st O:	Primary Owner (where the majority of the pole sits)
2nd O:	Second Owner
3rd O:	Third Owner
4th O:	Fourth Owner
A/F	Across From
AKA	Also known as
Appt	Appointment
AVE	Avenue
Avo grove	Avocado grove
BLVD	Boulevard
C/O	Corner Of
CDF	California Department of Forestry
C-	Cell phone, avoid ( ) use – or blank space to separate numbers
Cir	Circle
Cit grove	Citrus grove, fruit grove
CT	Court
DR	Drive
ESA	Environmentally Sensitive Area
FS	Fire Station
FT	Feet
FWY	Freeway
HQ	Headquarters
H-	Home phone, avoid ( ) use – or blank space to

	separate numbers
HWY	Highway
I/O	Intersection of
I-15	Interstate 15, replace the number keep I- as the standard

Section 14: Approved Abbreviations cont.

Abbreviation	Translation
Jnct	Junction
Lg Vol	Large Volume
Ln	Lane
Mi	Mile
MM	Mile Marker
N, E, W, S	North, East, West, South
N/O E/O W/O S/O	North of, East of, West Of, South Of
NE NW SE SW	North East, North West, South East, South West
PKWY	Parkway
PL	Place
RD	Road
Rdside	Roadside
ST	Street
Tenant:	Tenant information. (Not the owner but they may have special requests, i.e. call first for access to property, or animal concerns)
Terr	Terrace
TRL	Trail
YD YDs	Yard, Yards
W-	Work phone, avoid ( ) use – or blank space to separate numbers

Table 11.1: VMA Schedule (Northern SDG&E Territory)

VMA	North	VMA Name	Estimated Trees	Pre-inspection Start	Pre-inspection Audit Start	Tree Trim Start	Tree Pruning Finish
378	N E	Pala	1,559	July	August	September	November
379	N E	Rainbow 1	2,736	July	August	September	November
388	N E	Rainbow 2	2,131	July	August	September	November
702	N W	Dana Point 1	943	July	August	September	November
703	N W	San Juan Capistrano	2,104	July	August	September	November
707	N W	Laguna Hills	1,288	July	August	September	November
708	N W	Dana Point 2	932	July	August	September	November
752	N W	Ortega	946	July	August	September	November
360	N E	Pauma Valley 1	4,176	August	September	October	December
361	N E	Pauma Valley 2	1,797	August	September	October	December
364	N E	Courser Canyon 1	3,465	August	September	October	December
370	N E	Palomar Mtn 2	2,683	August	September	October	December
375	N E	Palomar Mtn 1	2,579	August	September	October	December
607	N W	Oceanside North 1	2,882	August	September	October	December
611	N W	Oceanside South	2,432	August	September	October	December
616	N W	Oceanside North 2	2,541	August	September	October	December
701	N W	San Clemente	2,083	August	September	October	December
371	N E	Warner Springs	4,106	September	October	November	January
374	N E	Mesa Grande 1	3,196	September	October	November	January
386	N E	Santa Ysabel	4,084	September	October	November	January
604	N W	Encinitas North 1	2,729	September	October	November	January
605	N W	Carlsbad	5,399	September	October	November	January
357	N E	Lake Wohlford	4,596	October	November	December	February
366	N E	Rincon	2,509	October	November	December	February
373	N E	Mesa Grande 2	1,093	October	November	December	February
603	N W	Encinitas South 1	1,959	October	November	December	February
614	N W	Encinitas South 2	1,338	October	November	December	February
652	N W	Rho S Fe N 1	3,605	October	November	December	February
358	N E	Vly Center East 1	2,561	November	December	January	March
391	N E	Vly Center East 2	3,348	November	December	January	March
651	N W	Rho S Fe S 1	3,555	November	December	January	March
673	N W	Rho S Fe S 2	2,552	November	December	January	March
674	N W	Rho S Fe S 3	1,643	November	December	January	March
350	N E	Lk Hodges South	3,780	December	January	February	April
351	N E	Lk Hodges North	3,150	December	January	February	April
610	N W	Vista South	2,307	December	January	February	April
623	N W	Encinitas North 2	2,218	December	January	February	April
653	N W	Rho S Fe N 2	3,269	December	January	February	April
363	N E	Hidden Meadows	5,480	January	February	March	May
606	N W	Vista North 1	2,973	January	February	March	May
654	N W	Buena Vista 1	2,798	January	February	March	May
670	N W	Buena Vista 2	2,041	January	February	March	May
304	N E	Escondido North	3,512	February	March	April	June
305	N E	Escondido Central	4,227	February	March	April	June
398	N E	Bonsall 2	2,266	February	March	April	June
624	N W	Vista North 2	2,684	February	March	April	June
655	N W	Gopher Cyn West	3,171	February	March	April	June

306	N E	Escondido South	2,521	March	April	May	July
362	N E	Jesmond Dene	4,479	March	April	May	July
382	N W	Gopher Cyn East 1	3,765	March	April	May	July
383	N W	Bonsall 1	1,545	March	April	May	July
387	N W	Gopher Cyn East 2	3,450	March	April	May	July
359	N E	Vly Center West 1	3,489	April	May	June	August
380	N W	Pala Mesa	4,177	April	May	June	August

Table 11.1: VMA Schedule (Northern SDG&E Territory) cont.

VMA	North	VMA Name	Estimated Trees	Pre-inspection Start	Pre-inspection Audit Start	Tree Trim Start	Tree Pruning Finish
384	N W	Fallbrook East 1	4,401	April	May	June	August
392	N E	Vly Center East 3	3,711	April	May	June	August
302	N E	San Marcos	4,609	May	June	July	September
312	N W	Fallbrook West 1	2,092	May	June	July	September
313	N W	Fallbrook West 2	3,077	May	June	July	September
314	N W	Fallbrook West 3	2,487	May	June	July	September
390	N W	Fallbrook East 2	3,518	May	June	July	September
399	N E	Vly Center West 2	4,340	May	June	July	September
376	N E	Lilac 1	2,325	June	July	August	October
381	N W	Winterwarm	4,468	June	July	August	October
385	N W	De Luz 1	2,323	June	July	August	October
389	N W	De Luz 2	3,058	June	July	August	October
395	N E	Courser Canyon 2	3,156	June	July	August	October
396	N E	Lilac 2	1,930	June	July	August	October

Table 11.2: VMA Schedule (Southern SDG&E Territory)

VMA	North	VMA Name	Estimated Trees	Pre-inspection Start	Pre-inspection Audit Start	Tree Trim Start	Tree Pruning Finish
462	S E	Potrero	4,264	July	August	September	November
464	S E	Boulevard	2,802	July	August	September	November
520	S W	Chula Vista West	3,846	July	August	September	November
521	S W	Chula Vista East	3,189	July	August	September	November
527	S W	Coronado -Imp	1,988	July	August	September	November
553	S W	Otay Mesa	1,016	July	August	September	November
460	S E	Jamul West	4,109	August	September	October	December
463	S E	Jamul East	3,109	August	September	October	December
518	S W	National City	3,647	August	September	October	December
519	S W	Paradise Hills	2,906	August	September	October	December
552	S W	Bonita	2,654	August	September	October	December
412	S W	Rancho San Diego	5,075	September	October	November	January
414	S W	El Cajon East	2,991	September	October	November	January
465	S E	Barett Lake	3,107	September	October	November	January
466	S E	Buckman Sprgs 1	1,968	September	October	November	January
475	S E	Blossom Vly 2	1,203	September	October	November	January
479	S E	Buckman Sprgs 2	2,568	September	October	November	January
210	S W	Point Loma	4,515	October	November	December	February
455	S E	Crest	2,267	October	November	December	February
456	S E	Singing Hills	4,266	October	November	December	February
510	S W	Mission Hills	2,774	October	November	December	February
513	S W	Center City	2,430	October	November	December	February

405	S W	La Mesa West	3,550	November	December	January	March
420	S E	Lakeside	5,334	November	December	January	March
450	S E	Blossom Valley 1	1,647	November	December	January	March
452	S E	San Vincente	1,849	November	December	January	March
512	S W	State College	2,503	November	December	January	March

Table 11.2: VMA Schedule (Southern SDG&E Territory) cont.

VMA	North	VMA Name	Estimated Trees	Pre-inspection Start	Pre-inspection Audit Start	Tree Trim Start	Tree Pruning Finish
514	S W	East San Diego	4,419	November	December	January	March
212	S W	Mission Bay	4,069	December	January	February	April
220	S W	Mission Valley	5,473	December	January	February	April
453	S E	Barona	808	December	January	February	April
454	S E	Dehesa	3,986	December	January	February	April
458	S E	Alpine	3,197	December	January	February	April
367	S E	Pine Hills 2	1,850	January	February	March	May
369	S E	Harrison Park	896	January	February	March	May
400	S W	Allied Gd San Carlos	2,512	January	February	March	May
410	S W	El Cajon West	3,009	January	February	March	May
416	S W	Santee	1,926	January	February	March	May
467	S E	Descanso	2,470	January	February	March	May
469	S E	Mt Laguna	3,855	January	February	March	May
368	S E	Pine Hills 1	2,944	February	March	April	June
372	S E	Borrego	2,495	February	March	April	June
377	S E	Whispering Pines 1	2,286	February	March	April	June
397	S E	Whispering Pines 2	3,613	February	March	April	June
403	S W	Lem Grv-Sp Vly	3,111	February	March	April	June
408	S W	Mount Helix	3,383	February	March	April	June
309	S W	Rancho Bernardo	2,489	March	April	May	July
355	S E	Ramona East 1	1,846	March	April	May	July
393	S E	Ramona South 2	1,953	March	April	May	July
394	S E	Ramona East 2	3,143	March	April	May	July
451	S W	Eucalyptus Hills 1	1,960	March	April	May	July
477	S W	Eucalyptus Hills 2	1,472	March	April	May	July
601	S W	Del Mar	2,575	March	April	May	July
311	S W	Poway South	4,745	April	May	June	August
353	S W	Highland Valley	5,475	April	May	June	August
354	S E	Ramona South 1	2,913	April	May	June	August
468	S E	Viejas	4,385	April	May	June	August
215	S W	La Jolla	4,118	May	June	July	September
310	S W	Poway North	2,841	May	June	July	September
356	S E	Ramona North	3,595	May	June	July	September
365	S E	Ramona West	3,295	May	June	July	September
602	S W	Solana Beach	1,647	May	June	July	September
221	S W	Mira Mesa	4,969	June	July	August	October
352	S E	San Pasqual	5,666	June	July	August	October
406	S W	La Mesa East	4,139	June	July	August	October

Figure 16: VMA and Area Forester Boundary

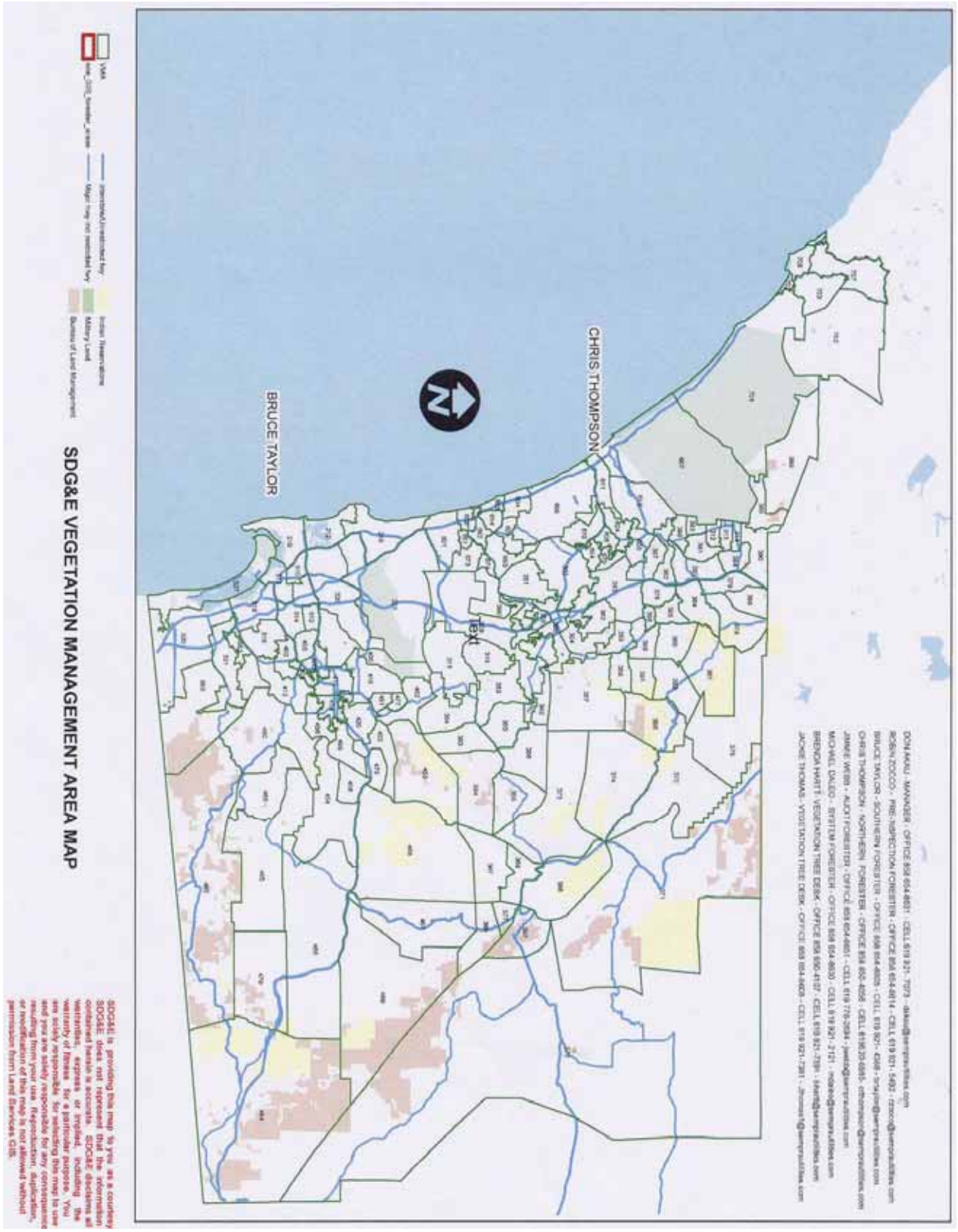
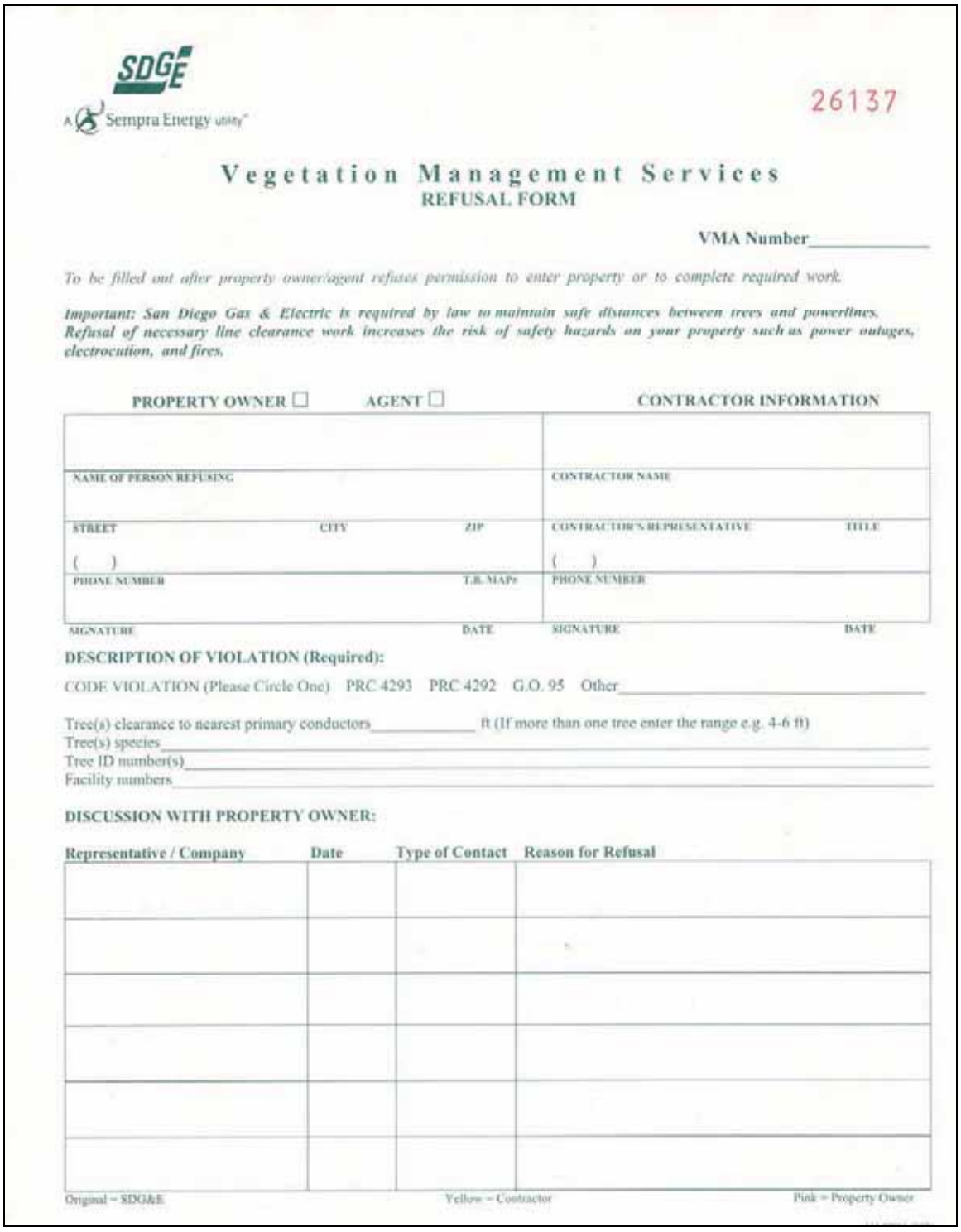


Figure17: Refusal Form



SDGE
A Sempra Energy utility

26137

Vegetation Management Services
REFUSAL FORM

VMA Number_____

To be filled out after property owner/agent refuses permission to enter property or to complete required work.

Important: San Diego Gas & Electric is required by law to maintain safe distances between trees and powerlines. Refusal of necessary line clearance work increases the risk of safety hazards on your property such as power outages, electrocution, and fires.

PROPERTY OWNER ☐ **AGENT ☐** **CONTRACTOR INFORMATION**

NAME OF PERSON REFUSING	CONTRACTOR NAME
STREET CITY ZIP	CONTRACTOR'S REPRESENTATIVE TITLE
( )	( )
PHONE NUMBER T.B. MAP#	PHONE NUMBER
SIGNATURE DATE	SIGNATURE DATE

DESCRIPTION OF VIOLATION (Required):

CODE VIOLATION (Please Circle One) PRC 4293 PRC 4292 G.O. 95 Other_____

Tree(s) clearance to nearest primary conductors_____ ft (If more than one tree enter the range e.g. 4-6 ft)
Tree(s) species_____
Tree ID number(s)_____
Facility numbers_____

DISCUSSION WITH PROPERTY OWNER:

Representative / Company	Date	Type of Contact	Reason for Refusal

Original = SDG&E Yellow = Contractor Pink = Property Owner

Figure 18: Tree Removal Authorization List Continued

VMA _____ TICKET # _____

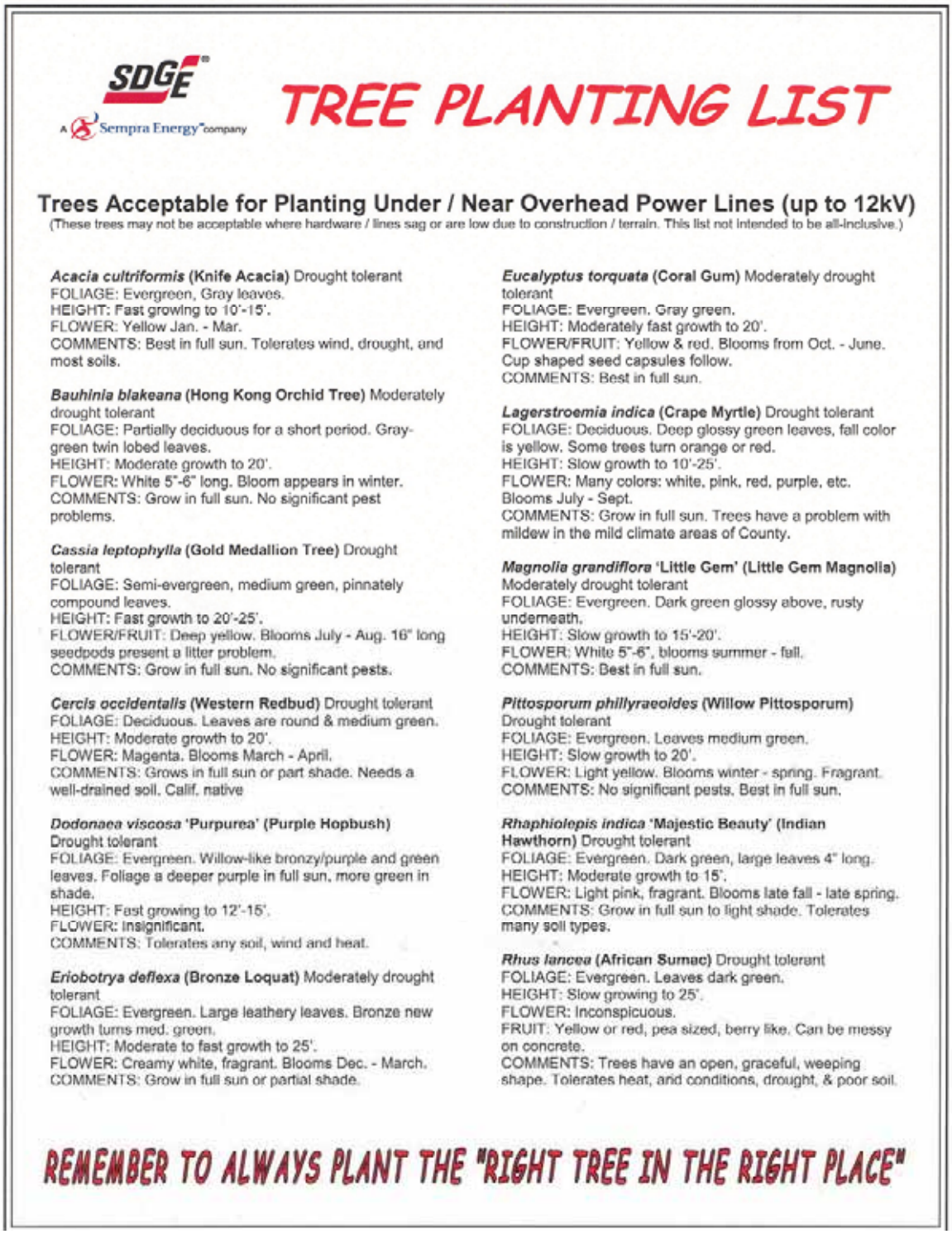
TREE REMOVAL AUTHORIZATION LIST CONTINUED

This work will be done by SDG&E **at no cost to me.** I understand that; (1) wood over 3 inches in diameter will be cut, whenever practical, into a manageable size and left at the site, unless requested otherwise, (2) branch debris will be removed from the site by SDG&E, (3) SDG&E will not grind/remove stumps.

Signature: _____ **Date:** _____

#	TREE ID#	START POLE	END POLE	UNIT #	SPECIFIC DBH
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					

Figure 19: Tree Replacement List



SDGE
A Sempra Energy company

TREE PLANTING LIST

Trees Acceptable for Planting Under / Near Overhead Power Lines (up to 12kV)

(These trees may not be acceptable where hardware / lines sag or are low due to construction / terrain. This list not intended to be all-inclusive.)

***Acacia cultriformis* (Knife Acacia)** Drought tolerant
FOLIAGE: Evergreen, Gray leaves.
HEIGHT: Fast growing to 10'-15'.
FLOWER: Yellow Jan. - Mar.
COMMENTS: Best in full sun. Tolerates wind, drought, and most soils.

***Bauhinia blakeana* (Hong Kong Orchid Tree)** Moderately drought tolerant
FOLIAGE: Partially deciduous for a short period. Gray-green twin lobed leaves.
HEIGHT: Moderate growth to 20'.
FLOWER: White 5"-6" long. Bloom appears in winter.
COMMENTS: Grow in full sun. No significant pest problems.

***Cassia leptophylla* (Gold Medallion Tree)** Drought tolerant
FOLIAGE: Semi-evergreen, medium green, pinnately compound leaves.
HEIGHT: Fast growth to 20'-25'.
FLOWER/FRUIT: Deep yellow. Blooms July - Aug. 16" long seedpods present a litter problem.
COMMENTS: Grow in full sun. No significant pests.

***Cercis occidentalis* (Western Redbud)** Drought tolerant
FOLIAGE: Deciduous. Leaves are round & medium green.
HEIGHT: Moderate growth to 20'.
FLOWER: Magenta. Blooms March - April.
COMMENTS: Grows in full sun or part shade. Needs a well-drained soil. Calif. native

***Dodonaea viscosa* 'Purpurea' (Purple Hopbush)** Drought tolerant
FOLIAGE: Evergreen. Willow-like bronzy/purple and green leaves. Foliage a deeper purple in full sun, more green in shade.
HEIGHT: Fast growing to 12'-15'.
FLOWER: Insignificant.
COMMENTS: Tolerates any soil, wind and heat.

***Eriobotrya deflexa* (Bronze Loquat)** Moderately drought tolerant
FOLIAGE: Evergreen. Large leathery leaves. Bronze new growth turns med. green.
HEIGHT: Moderate to fast growth to 25'.
FLOWER: Creamy white, fragrant. Blooms Dec. - March.
COMMENTS: Grow in full sun or partial shade.

***Eucalyptus torquata* (Coral Gum)** Moderately drought tolerant
FOLIAGE: Evergreen. Gray green.
HEIGHT: Moderately fast growth to 20'.
FLOWER/FRUIT: Yellow & red. Blooms from Oct. - June. Cup shaped seed capsules follow.
COMMENTS: Best in full sun.

***Lagerstroemia indica* (Crape Myrtle)** Drought tolerant
FOLIAGE: Deciduous. Deep glossy green leaves, fall color is yellow. Some trees turn orange or red.
HEIGHT: Slow growth to 10'-25'.
FLOWER: Many colors: white, pink, red, purple, etc. Blooms July - Sept.
COMMENTS: Grow in full sun. Trees have a problem with mildew in the mild climate areas of County.

***Magnolia grandiflora* 'Little Gem' (Little Gem Magnolia)** Moderately drought tolerant
FOLIAGE: Evergreen. Dark green glossy above, rusty underneath.
HEIGHT: Slow growth to 15'-20'.
FLOWER: White 5"-6", blooms summer - fall.
COMMENTS: Best in full sun.

***Pittosporum phillyraeoides* (Willow Pittosporum)** Drought tolerant
FOLIAGE: Evergreen. Leaves medium green.
HEIGHT: Slow growth to 20'.
FLOWER: Light yellow. Blooms winter - spring. Fragrant.
COMMENTS: No significant pests. Best in full sun.

***Rhaphiolepis indica* 'Majestic Beauty' (Indian Hawthorn)** Drought tolerant
FOLIAGE: Evergreen. Dark green, large leaves 4" long.
HEIGHT: Moderate growth to 15'.
FLOWER: Light pink, fragrant. Blooms late fall - late spring.
COMMENTS: Grow in full sun to light shade. Tolerates many soil types.

***Rhus lancea* (African Sumac)** Drought tolerant
FOLIAGE: Evergreen. Leaves dark green.
HEIGHT: Slow growing to 25'.
FLOWER: Inconspicuous.
FRUIT: Yellow or red, pea sized, berry like. Can be messy on concrete.
COMMENTS: Trees have an open, graceful, weeping shape. Tolerates heat, arid conditions, drought, & poor soil.

REMEMBER TO ALWAYS PLANT THE "RIGHT TREE IN THE RIGHT PLACE"

Figure 20: Refusal Handout (page 1)

SDGE®

A Sempra Energy® company

San Diego Gas & Electric
8315 Century Park Court Suite 22C
San Diego, CA 92123-1550

PLEASE READ THIS IMPORTANT INFORMATION NOTICE ABOUT REFUSING TO ALLOW TREE TRIMMING NEAR HIGH VOLTAGE POWERLINES

The purpose of this notice is to inform property owners about the requirements of maintaining safe distances between vegetation and high voltage power lines. San Diego Gas & Electric Company's Vegetation Management Program, ensures the safety of the public by reducing the risks of fires and personal injuries from overgrown vegetation coming in contact or growing near electric facilities. SDG&E contractors will trim trees on your property that present a hazard, at no cost to you.

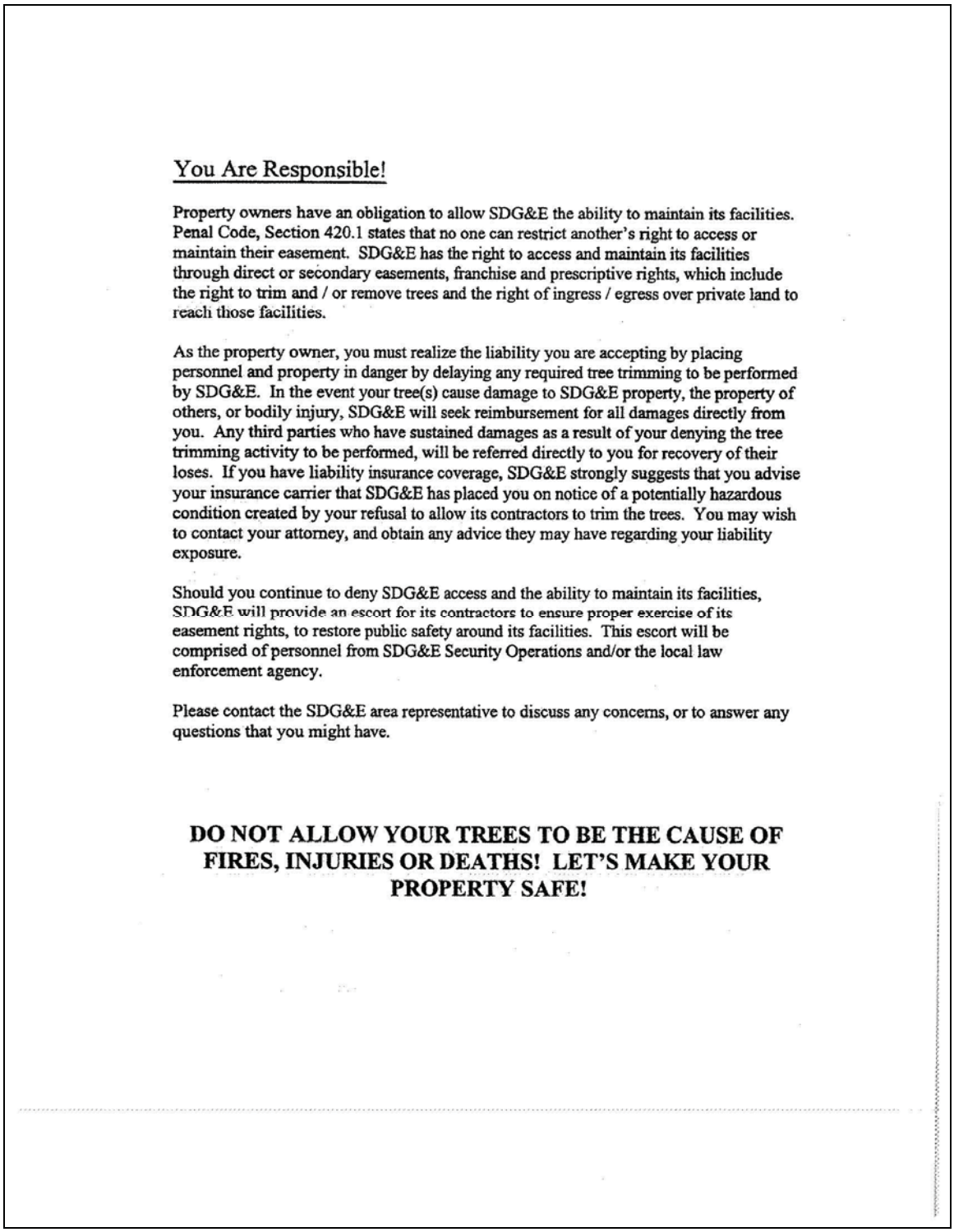
It's The Law!

State Law requires utility companies to maintain specific clearances (depending on the voltage running through the line) between electric power lines and all vegetation.

- **CPUC General Order 95, Rule 35**- requires SDG&E to maintain minimum clearances between vegetation and high voltage power lines. To minimize repeated trimming on a tree, utilities need to achieve at least one year of clearance.
- **Public Resource Code, Section 4293**- requires SDG&E to maintain minimum clearances, for fire prevention purposes, for those areas under the responsibility of the State California Department of Forestry and Fire Protection.
- **Cal OSHA, Title 8, Article 37**- States that no person shall come within 6' to 16' of energized high voltage power lines, and that no boom type of lifting or hoisting equipment shall come within 10' to 20', depending on the voltage of the high voltage power lines. This also means, there cannot be personnel or equipment in trees, such as Avocado or other fruit trees, six (6) feet or less from the high voltage power lines.

(over)

Figure 21: Refusal Handout (page 2)



You Are Responsible!

Property owners have an obligation to allow SDG&E the ability to maintain its facilities. Penal Code, Section 420.1 states that no one can restrict another's right to access or maintain their easement. SDG&E has the right to access and maintain its facilities through direct or secondary easements, franchise and prescriptive rights, which include the right to trim and / or remove trees and the right of ingress / egress over private land to reach those facilities.

As the property owner, you must realize the liability you are accepting by placing personnel and property in danger by delaying any required tree trimming to be performed by SDG&E. In the event your tree(s) cause damage to SDG&E property, the property of others, or bodily injury, SDG&E will seek reimbursement for all damages directly from you. Any third parties who have sustained damages as a result of your denying the tree trimming activity to be performed, will be referred directly to you for recovery of their loses. If you have liability insurance coverage, SDG&E strongly suggests that you advise your insurance carrier that SDG&E has placed you on notice of a potentially hazardous condition created by your refusal to allow its contractors to trim the trees. You may wish to contact your attorney, and obtain any advice they may have regarding your liability exposure.

Should you continue to deny SDG&E access and the ability to maintain its facilities, SDG&E will provide an escort for its contractors to ensure proper exercise of its easement rights, to restore public safety around its facilities. This escort will be comprised of personnel from SDG&E Security Operations and/or the local law enforcement agency.

Please contact the SDG&E area representative to discuss any concerns, or to answer any questions that you might have.

DO NOT ALLOW YOUR TREES TO BE THE CAUSE OF FIRES, INJURIES OR DEATHS! LET'S MAKE YOUR PROPERTY SAFE!

Figure 22: Major Woody Stem Exemption Form

Major Woody Stem (MWS) Exemption Form

The following criteria shall be applied to any tree being considered for MWS exemption*. Each condition below must exist for the tree to qualify for exemption. Exemption status shall be reviewed and documented annually by a qualified ISA Certified Arborist. MWS are those trees that meet the exemption criteria where clearances are within 4 feet but greater than 6 inches of primary conductor in the State Responsibility Area (SRA) of SDG&E territory; and within 18 inches but greater than 6 inches of primary conductor in the Local Responsibility Area (LRA) of SDG&E territory**.

Inspector / Company_____ Date_____

Vegetation Management Area (VMA) _____

Tree ID _____

Species_____

Tree Address_____

Current Clearance to Primary Conductor_____

Date of digital photo_____

Please check box for each condition that applies:

☐ Tree is at least 10 inches diameter at breast height (DBH)

☐ Tree limb or trunk is at least 6 inches diameter at line height (DLH)

☐ Tree has been established for at least ten years.

☐ Tree is sufficiently rigid so as not to encroach within 6 inches of primary during wind or storm event.

☐ Tree is healthy, showing no signs of decay, disease, structural defect, or lean.

☐ Tree does not show signs of previous contact with the conductor.

*MWS exemption applies only to primary voltages.
**MWS exemption for SRA is an interim rule which expires December 31, 2008. The State Board of Forestry will then review the process to determine whether the exemption shall continue.

(3/07)

APPENDIX 4

Transmission Operator
Reliability Readiness Audit Report

San Diego Gas & Electric

August 14–17, 2006

San Diego, California

North American Electric Reliability Council

Table of Contents

Introduction and Audit Process

The North American Electric Reliability Council (NERC) Reliability Readiness Audit and Improvement Program is one of the commitments of NERC and the industry following the blackout of August 14, 2003, to strengthen the reliability of the North American bulk power system. The program conducts independent audits of balancing authorities, transmission operators, reliability coordinators, and other key entities that support the reliable operation of the bulk power system to assess their preparedness to meet their assigned reliability responsibilities. The audits identify strengths and areas for improvement in an effort to promote excellence in operations among these organizations. The document *NERC Readiness Audit Procedure* describes and defines the process used for reliability readiness audits. This document and other documents related to the program are available at http://www.nerc.com/~rap/.

The reliability readiness audit teams, each led by a NERC staff member and a regional co-leader, include industry volunteers with considerable expertise selected to provide representation from other interconnections, other regions, and neighboring operating entities. The teams also typically include representatives from the Federal Energy Regulatory Commission (FERC) staff.

The public version of the reliability readiness audit report contains the majority of the audit team's findings. Any discussion of findings pertaining to either critical energy infrastructure or operating documentation will be contained in Appendix 1 and Appendix 3, are confidential appendices to the report that are sent privately to the organization audited and are not included in the public version of the report.

The audit team for the San Diego Gas & Electric (SDGE) audit met on-site with SDGE representatives on August 14–17, 2006. This report reflects the views and recommendations of the audit team regarding the readiness of the SDGE to meet its responsibilities as a transmission operator.

Audit Team

Steve Ashbaker*	Western Electricity Coordinating Council (WECC)
Romulo Barreno	Federal Energy Regulatory Commission (FERC)
Mike Flores	Tucson Electric Power Company (TEPC)
Jim Jensen*	North American Electric Reliability Council (NERC)
John Keller	Atlantic City Electric (ACEC)
Renee Knarreborg	Tacoma Power (TPWR)
Jeff Mitchell	Reliability*First* Corporation (RFC)

*Team co-leader

Organization Profile

San Diego Gas & Electric (SDGE) is a regulated utility that serves 1.3 million electric and 800,000 natural gas customers, spanning 4,100 square miles in San Diego County and a portion of southern Orange County, California. SDGE owns more than 21,000 miles of distribution lines, which serve about 25 communities. SDGE operates 215 miles of 500 kV, 349 miles of 230 kV, and 265 miles of 138 kV transmission lines. SDGE has limited power generation operations consisting of two generators totaling 588 MW. Generation operated by others in the SDGE operating area brings the total to 3,353 MW. The all-time peak load of SDGE is 4,502 MW, established on July 22, 2006. SDGE was the control area operator for its service area prior to the California legislation on electric restructuring. The implementation of the restructuring legislation in 1998 created the California Independent System Operator (CAISO). SDGE and the CAISO executed a *Transmission Control Agreement*, transferring balancing authority and transmission operator functions to the CAISO. The SDGE transmission lines are managed by the CAISO. The California Mexico Reliability Coordinator (CMRC) is the reliability coordinator for SDGE. SDGE registered as a transmission operator with WECC and NERC.

Executive Summary

The audit team found no significant operational problems and concluded that the SDGE transmission operator has adequate facilities, processes, plans, procedures, tools, and trained personnel to perform the transmission operator functions necessary to maintain the reliable operation of the bulk power system. The only shortcoming is the lack of adequate shift personnel and training staff to allow sufficient time off shift for training, a situation SDGE is addressing. The audit team identified a number of positive observations and two potential examples of excellence. It also offers nine recommendations that, if implemented, will greatly enhance SDGE's readiness to operate reliably and maintain the reliability of the bulk power system. The findings are listed in order of importance.

Potential Examples of Excellence

The audit team identified the following potential examples of excellence in its reliability readiness audit:

1. *See discussion in Appendix 1.*
2. SDGE has a very extensive, detailed, and complete vegetation management program (Section 16).

Positive Observations

The audit team noted the following positive observations during the reliability readiness audit process:

1. Extensive and thorough documentation is available to operators, both online and in hard copy (Section 6).
2. The "lessons to be learned" documentation is a good training tool (Section 5).
3. The backup control center is redundant and independent of the primary control center (Section 9).
4. The system operators make effective use of the state estimator and real-time contingency analysis applications (Section 10).
5. SDGE has a single energy management system (EMS) display showing ten frequency measurements (Section 12.c).

Recommendations

The audit team recommends that SDGE take the following actions to address issues discovered during the audit process:

1. Complete the operator staffing requirements for the new training program and dispatcher training simulator (DTS) version 8.1 or higher to ensure adequate training (Section 5).
2. Commit additional operations staff support to make the DTS functional and for continual maintenance and development of training scenarios (Section 5).
3. Update NERC and regional operations manuals at the backup control centers and the training area (Section 6).
4. Develop a formal shift-change procedure and include it in the training program (Section 6).

5. Update the job descriptions for transmission system operator and operations shift supervisor positions to include an authority statement (Section 2).
6. Complete the implementation of the learning management system (LMS) to assist with documentation management and distribution (Section 5).
7. Provide a means to notify the system operators in addition to EMS staff for a failure of the EMS alarm processor **(**Section 12.b).
8. Revise the operator log philosophy by developing and implementing an electronic logging system for multiple users, including both the operations shift supervisors and transmission system operators, to track real-time activities (Section 6).
9. Develop a single comprehensive training module for the San Onofre nuclear generating station (Section 17).

Discussion

The reliability readiness audit team examined the following key areas during the audit. The detailed discussion that follows provides the foundation for the recommendations, positive observations, and potential examples of excellence that the team identified. The report uses the generic term "system operator" to refer to all on-shift operating personnel responsible for executing the functions necessary to operate reliably and maintain the reliable operation of the bulk power system. This term will be used for the discussions unless additional specificity is required, such as the *balancing* system operator, or *transmission* system operator.

1. Agreements

The balancing authority must have agreements that establish its authority as a balancing authority. The balancing authority/transmission operator must have agreements that establish the reliability coordinator for its footprint.

SDGE was the control area operator for its service area prior to the California legislation on electric restructuring. The implementation of the restructuring legislation created the CAISO. SDGE and the CAISO executed a *Transmission Control Agreement* (TCA), transferring balancing authority and transmission operator functions to the CAISO.

The CMRC is the reliability coordinator for the SDGE operating area. Normally SDGE does not interact with the CMRC directly. SDGE communicates planned and emergency situations to the CAISO, who then coordinates any required actions with the CMRC. SDGE and CMRC communicate directly in the event of unusual circumstances or emergencies.

SDGE has various agreements remaining in place with neighboring entities since the formation of the CAISO and the TCA. The CAISO and its participating transmission owners are currently revising and updating the TCA to eliminate, add, or revise these agreements as necessary to reflect the organizational changes.

2. Operator Authority

The balancing authority/transmission operator is responsible for establishing and authorizing the system operator position that will have the on-shift responsibility for the safe and reliable

operation of its portion of the bulk power system in cooperation with neighboring operating entities and the reliability coordinator.

The SDGE statement of operator authority is contained within the *Standard Operating Procedure TMC1000, System Operator Responsibility and Authority* that states: "System Operators have the responsibility and authority to implement real time actions, to ensure the safe and reliable operation of the SDGE Electrical Transmission Grid and our interconnections. This requires they follow all SDGE, NERC, WECC and CAISO policies, standards and procedures during normal and emergency conditions and also directs that the System Operators will follow the direction of the RC and the CAISO." The authority statement is signed by the senior vice president of electric transmission and is posted on the wall of the control room.

The SDGE system operators stated they have the authority and the responsibility to take any actions necessary to preserve the reliability of the bulk power system.

The audit team noted that the job descriptions for the SDGE operating positions do not include the operator authority statement and recommends that SDGE update these job descriptions to include the operator authority statement.

3. Delegation of Authority

Any functions that have been delegated must be clearly documented. The documentation must recognize that the balancing authority/transmission operator that is delegating the function continues to be responsible for that function.

SDGE executes real-time switching for scheduled and forced outages, clearance, and tagging authorization to field crews; however, authorization is through the CAISO. The SDGE transmission operator performs voltage control and monitors the power system under normal system operating conditions. This is part of an agreement between CAISO and SDGE for transmission operation functions that are delegated back to SDGE.

4. Staff Certification

Balancing system operators and transmission system operators must be NERC-certified operators. The balancing authority/transmission operator must have sufficient NERC-certified operator staff for continuous coverage of the system operator positions.

SDGE requires NERC certification for the real-time operating positions of operation shift supervisor and transmission system operator. Any employees in staff positions that may perform real-time functions are also required to maintain NERC certification. Currently, those positions include the team lead for training, team lead for technical support, team lead for outage coordination, and outage coordinator advisors. There are several other members of the SDGE grid operations staff that have elected to acquire NERC certification. All tasks in the control center regarding electric system operating or monitoring are performed by NERC-certified operators. Most of the system operators are certified as transmission operators, while a few are certified as reliability operators.

The audit team reviewed the NERC certificates and SDGE system operator shift schedules to confirm that all operating personnel are NERC-certified.

5. Training

The system operators must be adequately and effectively trained to perform their roles and responsibilities. The balancing authority/transmission operator must have documents that outline the training plans for the system operators. The balancing authority/transmission operator must have training records and individual staff training records available for review.

Potential operator-trainee candidates typically come from the SDGE distribution department. Candidates are given written and oral tests. SDGE also screens potential candidates for sick leave usage, performance evaluations in prior positions, and questionnaires from management and field personnel.

Initial training for operator candidates consists of 20 modules (based on the NERC functional model) within a new training program that SDGE recently purchased and is delivered by the team lead of training, subject matter expert, or vendor. The lesson plan for each module contains a list of course objectives.

Trainees review these modules until they can demonstrate proficiency; they are then evaluated by a written test. The initial training schedule is normally three to six months including a period of on-the-job training (OJT). SDGE uses an OJT checklist that clearly identifies each task for the transmission operators to review with the shift supervisor to ensure they can demonstrate adequate knowledge of specific tasks. SDGE uses the results of exams and feedback from trainees to determine the effectiveness of its training programs. The audit team reviewed several of the exams and determined they were very effective. To prepare for the NERC certification test, SDGE provides trainees with online training and a five-day in-house training class.

SDGE currently uses a mixture of internal and external methods to deliver ongoing training. In-house, ongoing training is provided throughout the year on various topics in hour-hour sessions. The course content and objectives are based on a job task analysis. The trainer teaches the hour-hour classes to all three of the SDGE operating positions. SDGE also provides training arranged through outside organizations, such as WECC and Web-based training providers, and has contracted for a training program that will formulate and deliver online training on demand in the future. SDGE has not implemented a training schedule; training is provided using a significant amount of overtime. SDGE has a goal to implement training schedules as additional personnel become trained and certified, and to dedicate staff as needed for that training.

The training team leader attended “train-the-trainer” workshops sponsored by WECC and NERC last year. Also, one other operations shift supervisor has attended a NERC train-the-trainer workshop.

SDGE needs to implement a process to track system operator training and certificate expirations. SDGE has purchased a new system application called LMS to help with this process. The LMS is capable of creating periodic reports to alert both SDGE and the system operator of pending certification expiration in order to have adequate planning time to insure certification

requirements are met. The evaluation of training success is based on the results of operator exams. As SDGE moves forward with the new LMS program, a larger database of questions will develop. The audit team recommends that SDGE complete implementation of the LMS to assist with documentation management and distribution.

The operators noted they do not have a specific training week. The operators made it clear that attending training classes on overtime has never been an issue but staffing has limited the ability to have sufficient training. The SDGE system operators indicated that up until the last six to eight months, there was not sufficient operating staff to allow time off shift for training. SDGE has recently added three new system operator trainees and one additional operations supervisor trainee. Once these personnel are qualified to assume shift duties, SDGE intends to implement a structured and regularly scheduled training week. The audit team recommends that SDGE complete the system operator staffing requirements for the new training program to ensure adequate training.

The audit team reviewed the SDGE yearly training schedule and the individual system operator training records. The 2005 individual records are paper records; the current records for 2006 are in the new documentation program. SDGE has provided 108 hours of NERC training and five hours of WECC training for each system operator in 2006.

SDGE created a "lessons to be learned" book that contains information on specific unusual events that have occurred on the electric system and how these situations were managed. There may be one or two events per year that are recorded in the manual. The grid operations manager determines what events are appropriate and the operations supervisors write a discussion of those events. The SDGE system operators stated that the lessons to be learned book is a valuable tool for training and provides valuable lessons without having to experience the events. The audit team was impressed by the value of training the lessons to be learned book provides and cited it as a positive observation.

SDGE has a DTS that is not presently functional. SDGE is working on getting the DTS running by the fourth quarter of 2006. The DTS will require dedicated personnel to develop scenarios and keep the system running smoothly for training. The audit team recommends that SDGE commit additional operations staff support to make the DTS functional, provide ongoing maintenance, and develop training scenarios.

The team noted the following details for other SDGE training initiatives:

- Code of conduct training is provided by the SDGE corporate training department using Web-based training on the corporate internet.
- Outage coordination training is provided by the team lead of outage coordination.
- Cyber security training is provided through a corporate Web-based training module.
- Training on loss of the EMS is done with on-the-job training and is included in drills for operating from the backup control center.

6. Operating Policies and Operating Procedures

The balancing authority/transmission operator must have an established procedure to ensure that system operators and operations staff are aware of any changes to NERC, regional, and/or local policies or procedures prior to taking over control of a shift position.

The balancing authority/transmission operator must have shift change procedures for updating incoming shift personnel on the current status of the system.

Presently, SDGE e-mails revised or new procedures to system operating personnel. Critical updates are posted on the control center clipboard, and the shift supervisor reviews the updates with the crews. SDGE is replacing this method with a formal vendor-supported LMS and document control system (DCS) database. The DCS will control all revisions and distribution of documents as well as track when each system operator has reviewed a document. The SDGE system operators stated that they believe the LMS program will be better for tracking changes and evaluating the system operators' understanding of the changes.

SDGE reviews emergency operating procedures for applicability and updates them every year or earlier, as necessary. Other operating procedures are reviewed on a three-year cycle or earlier, if necessary. SDGE creates new documents as the need may arise. Any documents requiring updates are sent to the appropriate departments for review. The revised documents are consolidated by the grid operations business analyst and reviewed internally by the grid operations department for applicability. This process is repeated until all involved departments agree on the revision.

SDGE does not have a formal shift-change procedure. The system operators rely on a daily log information exchange at the start and end of each shift. The system operators noted they need a more efficient logging system, as the current process is cumbersome and labor intensive. SDGE has an operating procedure that describes a "running and shift turnover log." The audit team observed several documents where this information is logged and tracked. The operations shift supervisor has an electronic log. The transmission system operator uses a hand-written log. The two desks share and enter daily activities from each position. At the end of each day, the operations shift supervisor produces a daily report of the systems operations. There are also separate logs for substation entry and switching orders. The audit team observed the possibility for error in the exchange of information due to the large number of individual documents, logs, and clipboards of information. The audit team recommends that SDGE develop and implement an electronic logging system for multiple users, including both the operations shift supervisors and the transmission system operators, to track real-time activities and equipment outages or clearances. The system should be based on a relational database concept to allow for simultaneous, multiple-user access and incorporate a function for report development. The audit team also recommends that SDGE develop a formal shift-change procedure and include it in the training program.

The SDGE system operators have a computer terminal to access the NERC operating standards from the SDGE Web site. The system operator also demonstrated the ability to access the WECC operating committee handbook and the SDGE system operating procedures. These documents are all available in hard copy. The audit team observed that the SDGE blackstart and

restoration plans and the CAISO guides, manuals, and procedures are available to the system operators and appeared to be current and complete. The audit team cited the extensive and thorough documentation available to operators, both online and hard copy, as a positive observation.

At the backup control center, documents are available to the operators from the SDGE Web site and in a hard copy format. The SDGE system operators manage an "update basket" to store document revisions for transfer to the backup control center. These documents are taken to the backup control center and filed at least once a week.

The audit team found outdated versions of the NERC and regional operating manuals at the backup control center and at the training center. The audit team recommends that SDGE update the NERC and regional operating manuals at these locations.

7. Planning

The balancing authority/transmission operator and its supporting planning organizations must have a process for day-ahead planning, and for longer-term planning, such as week-ahead, seasonal, and year-ahead, for the operation and outage scheduling of transmission facilities and generation and reactive resources.

The balancing authority/transmission operator and its supporting planning organizations must have agreements with its reliability coordinator to ensure that day-ahead and longer-term plans for the operation and outage scheduling of transmission facilities, and generation and reactive resources, will not jeopardize the reliability of the bulk power system.

SDGE participates in the WECC study group and the system review work group. These groups compile a ten-year data bank of power flow base cases and associated stability data, conduct annual assessments of near-term and longer-term system performance, and define system representation in WECC power flow and stability studies. The planning coordination committee recommends criteria for the guidance of the members, accumulates necessary data, performs regional studies, evaluates proposed additions or alterations of facilities, studies delay impacts of generation and transmission facilities, and reviews reports of subcommittees. The technical studies subcommittee performs studies, maintains data files, evaluates project additions or alterations, prepares reports and recommendations, and performs other duties dictated by the planning coordination committee.

The SDGE annual grid assessment study covers a ten-year planning horizon and is conducted using a CAISO stakeholder process that provides significant opportunities for third-party review, input, and debate. Power flow cases are prepared for each year in the study period to model the transmission system, reflecting known or anticipated system conditions, approved facilities, and load and resource assumptions. Thermal analysis is performed under peak conditions to assess thermal line load limitations. Voltage limit studies are conducted to identify buses in the SDGE system with voltage deviation of greater than or equal to 5 percent and voltage magnitude of less than or equal to 0.90 per unit for all single contingencies. Voltage stability studies are conducted in accordance to the WECC voltage stability criteria to ensure sufficient reactive power margins exist under the most critical contingencies. Transient stability studies are performed to ensure

compliance with WECC criteria. Once a recommended solution is developed, the project then goes through an internal technical review council assessment to ensure transmission capacity projects are prudent and bring value to the customers and shareholders. These annual studies typically identify several new transmission projects, subject to CAISO approval, that are needed for continued compliance with the CAISO reliability criteria. The annual process also considers transmission projects that are based on providing economic benefits to customers and/or stakeholders.

SDGE conforms to the resource adequacy requirement (RAR) policies established by the California Public Utilities Commission (CPUC). Current capacity reserve margin requirements were adopted and implemented by the CPUC in the course of establishing RAR program standards. The current adopted planning reserve margin is 15%–17%. SDGE will show a 40% reserve margin in its resource adequacy monthly filing for August 2006. This includes CAISO reliability must run condition 2 units and SDGE's contract portfolio.

To determine if WECC voltage stability criteria are met, SDGE evaluates voltage adequacy and reactive power requirements annually utilizing GE's governor power flow software. Satisfactory performance is determined based on solved governor power flow contingency analysis, which increases load and/or import by 2.5% and 5% above the adverse forecast.

The SDGE process for determining import and export capabilities is performed by both the transmission planning and grid operations departments. The operations department performs power flow studies to evaluate the upcoming peak season with both of SDGE's major interconnections in service (normal condition), with one of the major interconnections out-of-service, or with a San Onofre substation bus-tie breaker and/or San Onofre nuclear generating station (SONGS) Unit #3 out-of-service. The details of this analysis are contained in a yearly report. The transmission planning department performs power flow studies to evaluate import and export capabilities using the same methodology for future years. SDGE's import capability for the heavy summer peak season is 2,850 MW. SDGE's existing export limit is defined by the WECC Path 43 limit of 2,440 MW, but during peak season conditions, SDGE does not export power.

SDGE grid operations personnel participate in the California operating studies subcommittee (OSS). This group studies and makes recommendations seasonally to the operating transfer capability policy committee. The OSS group determines transfer capabilities on a tri-seasonal basis (spring, summer, and fall/winter). Internally, SDGE prepares what is called the contingency reference manual that summarizes the summer assessment studies. During these studies, the simultaneous and nonsimultaneous import restrictions into the SDGE transmission system are identified. The contingency reference manual contains specific system operator actions available under contingency conditions.

Every spring, the operations shift supervisors meet with the operation engineering and planning staffs to discuss results of seasonal operating studies and any new operating procedures needed. The transmission system operators attend a similar meeting with a higher-level overview of the seasonal study results, including import and export limits. The system operators noted that they would like to be more involved and receive more training in the planning process. The

transmission system operators (TSO) noted they were starting to spend a period of time with the outage coordination staff, which they felt was very useful.

SDGE defines system operating limits during internal study processes, contingency reference manual studies, and special studies triggered by changes in the system. Limits are determined as necessary for reliable operation of the SDGE system and the immediate interconnections. NERC, WECC, or CAISO criteria are used, whichever are more restrictive. Interconnected reliability operating limits are determined either through regional study processes or as the need may develop with a neighboring utility.

For short-term planning, the grid operations engineering group performs weekly evaluations on different operating scenarios, including the planned and proposed outages coming up in the next six months. The assessment of the system could include power flow, contingency analysis, voltage stability, and resource adequacy analysis. The studies are performed using either the GE Power System Load Flow program or the Study Contingency Analysis program. SDGE plans and operates to WECC, CAISO, and SDGE criteria, using whichever are more restrictive. SDGE's resource plan analysis is limited to verifying that the CAISO has generation within the SDGE service territory to meet SDGE and CAISO transmission reliability criteria. SDGE updates operating procedures when studies indicate the need.

SDGE uses the rea-time power network application (PNA) software for day-ahead and real-time contingency analysis studies. The analyses identify thermal limitations and voltage violations. Based on the results of the analyses, import level, generation requirements, and sectionalizing or special operator actions are identified and documented daily in what is called the transmission network analysis (TNA) log. The TNA contains the different limits found and the operating actions applicable for the day. These PNA/TNA studies are produced three days ahead and reviewed the day before. Voltage stability limits are identified on a seasonal basis or as needed, if there are changes in the system. These studies identify the minimum number of units needed for different load levels and for different import levels. The operations shift supervisor also has the ability to run PNA in real time to ascertain current system conditions and potential limitations or areas of concern.

The SDGE EMS contains a power network analysis package that includes a network configurator, a two-pass state estimator, and contingency analysis. Grid operations engineering is responsible for developing, entering, and maintaining the power system models. The network configurator, the state estimator, and the contingency analysis packages currently run every 15 to 30 minutes or upon system operator request due to an unexpected system outage. The system operator and engineers have raw data from SCADA available, and any discrepancies are studied as soon as they are identified. When there are special system conditions due to a disturbance or other factors, the system operators and the engineers often create a study case in the EMS (snapshot of the system). These cases are used to identify potential data problems in the system. They are also used to analyze the specific condition of concern and to submit disturbance cases to WECC.

Changes in or additions of facility ratings due to system changes are reflected in the standard operating procedures. SDGE provides the procedures, as changes occur, to the CAISO and makes associated rating updates to the CAISO transmission register. Rating updates are also

provided to various SDGE internal groups, including transmission planning. SDGE periodically reviews the WECC operating cases to make sure rating updates for SDGE facilities and known critical ratings for the neighboring systems are implemented and modeled in the case.

8. Outage Coordination and Communication

Planned outages of transmission facilities and generating units must be coordinated with the reliability coordinator to ensure that conflicting outages do not jeopardize the reliability of the bulk power system.

Information relative to forced outages of transmission facilities and generating units that may jeopardize the reliability of the bulk power system must be shared with affected balancing authorities, transmission operators, and the reliability coordinator as expeditiously as possible.

The CAISO is responsible for coordinating all switching with SDGE and its adjacent systems. SDGE initiates the procedures when it is necessary to schedule work on its portion of the interconnections. SDGE informs the CAISO and all affected systems. At the start of work, the CAISO coordinates the de-energizing of equipment with SDGE and the adjacent systems. The CAISO also coordinates the re-energizing following the completion of work. All equipment outages affecting the operation of the CAISO operating area are scheduled in accordance with CAISO and SDGE operating procedures. Critical equipment outages require at least three working days notice.

CMRC communicates real-time outage scheduling information, but does not coordinate future planned outages. The CAISO coordinates planned outages with SDGE operating personnel. The outage scheduling process is not a real-time function for the SDGE system operators.

The SDGE system operators noted that they would like more involvement with outage coordination. The audit team did not make a formal recommendation on this; however, the audit team suggests that SDGE establish a process to provide system operators with the opportunity to work and train with the outage coordination staff.

9. Plans for the Loss of Control Facilities

The balancing authority/transmission operator must have a workable plan to continue to perform the balancing authority/transmission operator functions that are required to maintain a reliable bulk power system following the sudden catastrophic loss of its primary control facility, or the partial or full failure of its computer facilities or monitoring tools at the primary control facility.

The backup control center facility is located about ten miles from the primary control center. The facility also contains the SDGE backup distribution control center. The backup control room is sized to accommodate a shift supervisor, transmission operator, operations engineer console, and three additional console positions. Each console position is equipped with telephones and a radio handset. The signed operator authority statement is clearly displayed in the backup control center control room.

The SDGE plan for the loss of the primary control facility includes two primary scenarios. The first scenario assumes that the primary EMS suffers a failure but sufficient network connectivity remains operational to the backup control center such that the system operators can continue to physically reside in the primary facility and electronically connect to the backup control center EMS. This would allow operators to continue monitoring and controlling the electric transmission system from the primary facility. The second scenario assumes that the primary EMS failure is severe, with the loss of network connectivity to the backup control center or backup EMS. For this scenario, the system operators physically relocate to the backup control center to monitor and control the electric transmission system.

In the event of a failure of both the primary and backup EMS, the SDGE procedure describes plans for manning of the critical SDGE substations by qualified personnel to monitor and control the electric transmission system.

SDGE does not temporarily delegate any functions to other operating entities during an emergency or while transitioning to the backup control center. However, CAISO has visibility of the SDGE system and control of generation.

SDGE conducts emergency training drills at the backup control center at least four times per year. Some drills last for three days over a weekend, some are scheduled for one day during the week, and others are scheduled during primary control center maintenance shutdowns. Training plans for 2006 include an unannounced extended drill at the backup control center that will last for two weeks. The drills include all the various operating personnel within the grid operations department, including grid control staff, grid control operators, EMS operations, and grid operations services. The SDGE nonoperating support department staff members also perform their normal working duties at the backup control center during the drills, simulating a real emergency. In all backup drills, the operators use the backup EMS and associated tools and materials to fully operate the electric transmission system from the backup control center.

The energy management systems at both locations are identical, including network infrastructure equipment, operator workstations, front-end processors, and the host processors. The backup EMS is a “hot standby.” SDGE can use the EMS in either the primary location or the backup location locally or remotely to operate the electric transmission grid, i.e., the system operators can be located at the primary site and use the secure network connection to the backup facility to operate the power system, and vice-versa.

The mapboard at the backup control center is a paper map of the 500 kV, 230 kV, 138 kV, and lower voltage systems. Updates to this map are managed by the technical support staff. SDGE has an approved project to replace the paper mapboard at the backup control center with a dynamic video mapboard.

The SDGE voice communications systems include standard landline telephone systems, 900 MHz stationary radios, portable 900 MHz radios, cell phones, and satellite phone equipment. These systems are similar at both locations. SDGE has independent voice recorders at both facilities, recording the control room phones and radios. The telephone system at the primary facility can be transferred over to the backup facility for drills or potential emergencies, but separate phone

numbers do exist at the backup facility in case the landline telephone transfer capability doesn't work.

The EMS data capabilities are similar at both facilities but not identical. Whichever EMS the system operators are currently using is considered "online." It sends and receives data to and from the field remote terminal units (RTUs) while the other EMS remains in a "listen" or receive-only mode. The EMS at the primary control facility receives all RTU-based system data, and also receives some "separate path" backup telemetry for generation and interconnection points. The EMS at the backup facility receives all the regular RTU-based system data points, but it receives separate path backup data only by scanning an RTU at the primary facility. The backup generation and interconnection telemetry data availability at the backup facility is dependent on being able to scan the RTU at the primary control facility. SDGE plans to submit a capital improvement project to address this issue in 2007.

The audit team cited a positive observation that SDGE has a fully functional backup control center with capability to perform all of the functions of the primary control center, even if the primary facility no longer exists or is functional.

10. Tools

The balancing authority/transmission operator must have adequate analysis tools to perform the balancing authority/transmission operator functions. Such tools include state estimation, precontingency and postcontingency analyses capabilities (thermal, stability, and voltage), mapboard (static, dynamic, hardwired, or projected), eTagging program, weather service, interchange scheduling system, outage scheduling system, trending tools, and a voice recording system.

Energy Management System (EMS)
The SDGE EMS is a full-graphics GE XA/21 system, with an upgrade to version 8.1 in progress. The system operators are asked for their input when new EMS displays are developed, and the data are presented in a user-friendly format. Tabular and graphic voltage displays have been developed that show both real-time and state estimator values. The system operator demonstrated the ability of the state estimator output to be posted to the EMS displays. The operators can compare state estimator values with EMS values. Some of the displays show this data side by side giving the operator the ability to quickly identify potential data problems with both real-time data and study state estimator results. The system operator also has the ability to toggle between application data and EMS data on any selected displays. This system provides system status and state estimator displays and the ability for an operator to run cases. The EMS has trending capability as well as plant information (PI) system for trending system data. SDGE provides EMS training only to operator trainees. There is no ongoing training provided to incumbent system operators other than when new applications are implemented.

State Estimator
The EMS includes a state estimator package that is trigged automatically every 15 minutes; the estimator is also event-triggered and can be manually initiated by the system operators. The system operator demonstrated the ability to initiate a manual request of the state estimator, which also initiates a run of the real-time contingency analysis (RTCA) program. The operations shift

supervisor has the primary responsibility for operating state estimator and RTCA applications. The system operator was not sure if an alarm existed for signaling when the state estimator or RTCA failed to run. The audit team suggests that SDGE consult the EMS technicians to enable an alarm should the security analysis program fail to run for any reason. The EMS has tabular and graphic voltage displays that show both real-time and state estimator values. SDGE periodically updates the state estimator model during the year and whenever there are major changes to the system.

The audit team cited a positive observation that the system operators make effective use of the state estimator and RTCA applications.

Real Time Contingency Analysis (RTCA)

The RTCA is programmable and automatically runs every 30 minutes. The operator successfully initiated the RTCA and demonstrated how to review the output results. The summary displays all of the credible n-1 and n-2 outages, bus outages, generator outages, and selected breaker-failure events. SDGE has a complete list of critical outages to use when performing RTCA. This list is revised annually and whenever a major project is completed and placed in operation. The system operator demonstrated the RTCA and reviewed the output results for the loss of a major transmission line that interconnects SDGE with a neighboring system.

The SDGE operations group has developed a contingency list that is used in performing RTCA. The list is updated at the beginning of each year and when system changes occur (periodically throughout the year) to ensure the RTCA system model is up-to-date and consistent with the EMS database.

The audit team cited a positive observation that the system operators make effective use of the state estimator and RTCA applications.

Dispatcher Training Simulator (DTS)

The SDGE system operator noted that the DTS is functional but is not used for training purposes. SDGE is in the process of updating the EMS software to version 8.1. Once this is completed, EMS personnel and training personnel will begin an aggressive schedule to update the DTS and make it functional for regular operator training.

Mapboard

The SDGE control room has a dynamic tile mapboard that is operated as a “dark board” showing abnormal conditions. The board shows breaker and generator status, alarm lights for remedial action scheme and underfrequency load shedding (UFLS) operation, blackstart locations, and substations with distribution RTU capability. Substations are grouped in two areas with the color of the first letter of each substation name indicating which group that station belongs to for purposes of calling regional centers.

SDGE has installed a projection screen that can be controlled by the system operators to evaluate it as a possible future replacement for the tile mapboard. The projection screen can display all EMS displays and other information available on the system operator’s screen. There is an LED screen located in one end of the control center that displays alternate tie-line data (MW & Mvar)

values, system load, generator output, and weather data (temperature, humidity, wind speed, and direction). There are also LED displays with time, load, and frequency data.

Voice Recording
SDGE has a voice recording system for the telephone and radios in the primary control center and a similar system installed at the backup center.

Load Forecasting
SDGE uses a "similar day" load forecasting tool to forecast SDGE load. The system operator uses this forecast to confirm the CAISO load projections for the SDGE area and to ensure the system has adequate import capability and internal generation to meet the anticipated peak demand. The system operator demonstrated the various ways to display and compare real-time loads and historical data.

SDGE has a weather service specially defined for system operations and distribution that monitors weather conditions and lightening strikes. The distribution department is testing improved weather techniques and discussing with operations system personnel the possibility of implementing them in the control center.

PI Historian Data Base System
Select SDGE staff has access to the plant information (PI) data system with displays that are populated with real-time data from the EMS. The system operator provided a demonstration of the PI displays and compared them to the EMS displays. The PI displays were built and laid out very similarly to the EMS displays. The PI system is still in its infancy and is continually being refined and developed.

Operator Power Flow
The system operator demonstrated the operator power flow application showing the results for multiple line outages, the loss of a generator facility with the resulting voltages, and system violations. After the system runs a system condition simulation, the software can present the results in either graphic display or tabular form. The power flow model is updated at the start of each year and whenever major system changes occur.

11. Load Shedding Plans

The balancing authority/transmission operator must establish plans for automatic load shedding for underfrequency or undervoltage conditions, coordinate load shedding plans with other interconnected entities, implement load shedding in steps to minimize further uncontrolled events, and have plans for operator-controlled manual load shedding to mitigate violations of system operating limits (SOL) or interconnection reliability operating limits (IROL).

The SDGE system operator provided a review and discussion of the EMS display that the SDGE system operators use to shed load from 26 individual load centers. This display allows selection of each substation as well as displaying actual load at each site. The preferred way of dropping load is to coordinate this process through the distribution dispatcher, if time allows. SDGE has 75% of its load on underfrequency relaying. SDGE and the Southern California Edison (SCE)

system will remain tied during extreme conditions when SDGE system needs to cut ties with other neighboring systems.

The SDGE underfrequency load shedding table tabulates the relay frequency pickup and associated time delay settings for the stations armed with underfrequency relays. SDGE implemented the high-level underfrequency load shedding option (as opposed to direct load tripping) with approximately 6.49% of system load set to trip at 59.5 Hz. In addition, approximately 5.96%, 7.21%, 6.99%, and 6.7% of system load are armed in the WECC-required Blocks 2, 3, 4, and 5, respectively. In addition to shedding the WECC-required 31% of system load in the prescribed five blocks, an additional 44% of the SDGE system load will be shed between 58.1 and 57.5 Hz, which brings SDGE automatic underfrequency load shedding capability to over 75% of system load. At 57.9 Hz after one second, all ties will open with adjacent utilities except for SCE.

SDGE uses automatic load restoration to correct frequency over-shoot. Approximately 2.08% of system load is restored automatically within 30 seconds at 60.5 Hz, another 2.0% is restored within five seconds at 60.7 Hz, and another 2.44% is restored within 15 cycles at 60.9 Hz.

SDGE implements emergency manual load shedding when deemed necessary by the CAISO and/or the SDGE system. The system operator on duty will follow CAISO load shedding instructions.

SDGE uses emergency manual load shedding as an immediate solution for local or system emergencies when, in the opinion of the CAISO or the SDGE system operator, there is not enough time to initiate any other mitigating action. These actions are necessary if conditions require prompt action to ensure personnel safety, preserve system integrity, or prevent cascading outages, voltage collapse, and/or equipment damage. SDGE may also initiate emergency manual load shedding for capacity deficiencies following the loss of generation and/or transmission facilities if there is insufficient time to implement the rotating load curtailment plan.

SDGE has large customers who contractually agree to interruption during defined emergency conditions. This process takes about 30 minutes to effectively see the load relief. SDGE system operators can initiate a signal from the EMS to alert the customer of the request.

All the substations listed in the SDGE emergency manual load shedding program are also included in the automatic UFLS program.

SDGE does not have an undervoltage load shedding program.

An underfrequency relay operation will initiate a start of three small combustion turbines if the frequency drops to 59.6 Hz or below for more than five seconds. More small combustion turbines will sequentially start if the frequency drops to 59.6 Hz or below for more than 15 seconds. In addition, approximately 26% of load should immediately be shed on underfrequency relay operation.

The system operator demonstrated access to the corporate Web site where the emergency manual load shedding procedure resides as well as to the hard copy procedure in the control room. The system operator also provided a review of the UFLS document. SDGE regularly updates its load shedding plan on its public Web site enabling emergency agencies and the public to respond to areas that will be affected by loss of service.

SDGE is involved in restoration training twice each year. SDGE provides annual in-house load shedding training and also works with the California electric training and advisory committee (CETAC) during CETAC's annual in-house training.

12. Real-Time Monitoring

a. System Visibility

The balancing authority/transmission operator must monitor operating data and status in real time for its area and adjacent areas as necessary to maintain situational awareness of its system.

The system operator provided a thorough review and discussion of the various EMS displays used for real-time system monitoring. The EMS displays are adequate and provide the system operators with sufficient monitoring capability. The system operator demonstrated the displays used to monitor internal system operating limits and ties with adjacent systems.

b. Alarms

The balancing authority/transmission operator must have effective and reliable alarming capability. This should be supported in the energy management system (EMS) and/or supervisory control and data acquisition (SCADA) system by alarm priority.

The SDGE system operator demonstrated the EMS alarm package for the audit team. There are eight different alarm priorities that are segregated by color. The system operator knows the severity of the alarm when it appears on the unacknowledged alarm summary and what action to take based on the color. Priority 1, 2, and 3 alarms are red. Lower priority alarms use yellow, magenta, cyan, and orange. The mapboard also has a light that will display whenever there is a substation alarm.

The SDGE alarm system is configured to allow a maximum of 5,000 alarms to be stored in the alarm summary queue at a time. When new alarms come into the system, the oldest alarms move to the bottom of the queue. On a normal day, the number of alarms is less than 500.

During real-time power system emergency conditions, the alarm subsystem has performed well. During an extreme system disturbance in October 2003, the alarm summary page displayed nearly 1,000 alarms and the system remained stable and operational throughout that incident.

SDGE does not have a heartbeat monitor on the alarm processor but has developed a method of determining the health of the alarm processor function. A subprogram automatically generates a low priority alarm to the EMS every five minutes. If this alarm is not recognized, select members of the EMS operations software team receive an e-mail notification and a cell phone text message to alert them to a potential problem with the system. The audit team recognizes this feature as a helpful tool; however, the audit team believes that SDGE stopped short by not also providing notification of the alarm processor failure to the system operator. The audit team recommends that SDGE provide a means to notify the system operators in addition to EMS staff for a failure of the EMS alarm processor.

The system operators indicated that the present alarm functionality needs improvement. The SDGE staff is presently working on improvements to the alarm package; therefore, the audit team did not choose to make a recommendation on this issue. SDGE management encourages more employee feedback on improvements and suggestions for improvement to the EMS.

c. Frequency

The balancing authority/transmission operator must monitor frequency, direct actions to resolve significant frequency errors, and correct real-time trends that indicate potentially developing problems. Frequency monitoring points should be of sufficient number and from several locations with sufficient area coverage to allow the balancing authority/transmission operator to effectively monitor the balancing authority/transmission operator footprint to determine possible islands.

SDGE has a single EMS display showing 10 individual frequency values from various points on its system. The frequency values are updated at the EMS data scan rate. They are displayed in tabular and geographical formats. The system operators stated they knew where the frequency monitoring points come from and that they are comfortable with the data being adequate to determine islanding conditions.

SDGE has two independent frequency sources for the primary control center that come from utility 12 kV circuits that feed the site. One frequency source is a wide-band device that is scaled from 55 to 65 Hz, and the second device has a higher resolution scaling from 59.5 to 60.5 Hz. The backup control center has a single independent frequency source. In both cases, these sources are independent of the EMS.

There is no requirement to have automatic failover, since SDGE does not perform automatic generation control functions.

The audit team cited a positive observation for the EMS showing multiple frequency measurement points on the same display.

d. Voltage/Reactive Reserve

The balancing authority/transmission operator must monitor voltage levels and take appropriate actions to support the bulk power system voltage if real-time trends indicate potentially developing problems. Voltage measuring points must be of sufficient number and from several locations and voltage levels to allow the balancing authority/transmission operator to effectively monitor the voltage profile of its footprint.

The balancing authority/transmission operator must ensure that reactive reserves are available and properly located to satisfy the most severe single contingency.

The SDGE system operator demonstrated the reactive reserve overview display that shows the net reactive reserve total from both dynamic and static devices. This display also shows generator MW output and unit status. The SDGE critical buses are shown on a tabular display with data from both state estimator applications and RTU field data. There also is an overview display showing var flow, voltage levels, and control of reactive devices. The SDGE system operators stated that they have adequate points to monitor the system.

The SDGE system operator demonstrated the ability to control the load tap changer (LTC) transformers from the voltage and var overview display. The system operators use distribution capacitors and other shunt devices prior to using generator vars. LTCs and distribution shunt capacitors are manually operated, and the system capacitors can be operated manually or automatically.

The generator voltage schedules are available at each system operator workstation with a chart for generator voltage schedules. The system operators monitor the generator var output and regulate static devices to keep rotating reserves at unity and ready for dynamic response.

SDGE does not perform reactive reserve capability tests.

CAISO is responsible for keeping records of generator testing and when automatic voltage regulators (AVR) are out of service. CAISO also reports AVR status to the CMRC.

The SDGE system operators are trained for low voltage conditions using a continuing education voltage control module.

e. Critical Facilities

Monitoring of facilities that are critical to the reliability of the bulk power system is a joint responsibility of the balancing authority, transmission operator, and the reliability coordinator.

An established process must determine which facilities are critical to the reliability of the bulk power system. Real-time operating information (data and status) and operating

limits for these critical facilities must be provided to the balancing authority, transmission operator, and the reliability coordinator.

SDGE defines critical facilities as those that impact import capability, generation deliverability, and operating limits (stability, voltage, or thermal). In general, the loss of a critical facility would result in cascading outages or conditions that negatively impact reliable delivery of imports and generation to load.

The SDGE system operator demonstrated the critical facility list that is maintained on corporate Web site.

f. Transmission System Congestion

The transmission operator must monitor transmission flowgates and be prepared to take actions to alleviate congestion in conjunction with, and as directed by, its reliability coordinator.

The CAISO is responsible for congestion management in its footprint, which includes the SDGE operating area. The SDGE system operators use the power network applications program in the EMS to monitor potential transmission congestion issues and will assist the CAISO when requested. The SDGE marketing group is responsible for mitigation of unscheduled system flows on WECC-qualified paths.

g. Load Generation Balance

The balancing authority must monitor the balance of load, generation, and net scheduled interchange in its balancing area. The balancing authority must take actions to mitigate unacceptable load, generation, and net scheduled interchange imbalance.

SDGE is a transmission operator only and is not responsible for load generation balance.

h. Contingency Reserves

The balancing authority must monitor the required reserves and the actual operating reserves in real time, and take action to restore acceptable reserve levels when reserve shortages are identified.

SDGE is a transmission operator only and is not responsible for contingency reserves.

i. Special Protection Systems

The balancing authority/transmission operator and the reliability coordinator must be aware of the operational condition of special protection systems that may have an effect on the operation of the bulk power system.

The SDGE operator provided an overview of SDGE's special protection systems (SPS) schemes. SDGE also noted there are schemes known internally as overload schemes. The overload schemes are used for more local area problems (overload schemes for low

voltage system overloads). The SPS schemes are armed on a continuous basis. SDGE has an EMS overview display that shows SPS status.

The system operators provided a brief description of the SPS for loss of a major transmission line that causes shedding of generation. The backup SPS action will trip additional transmission lines to the generator site.

The SPS display shows if it is armed or disarmed, enabled or disabled, and has a counter that monitors the data points.

13. System Restoration

The transmission operator must have a documented system-restoration plan that is consistent with NERC Reliability Standard EOP-005-0 — System Restoration Plans. This restoration plan must be provided to its reliability coordinator.

The transmission operator must be prepared to restore its transmission area following a partial or total collapse of the system and coordinate system restoration with its neighboring transmission operators and with the reliability coordinators.

There are seven blackstart units within the SDGE footprint with procedures in place to blackstart three base load power plants. SDGE does not own any of these blackstart units; all blackstart units are merchant units under the jurisdiction and control of the CAISO. The CAISO requires the blackstart units to be tested annually and coordinates that testing. The San Onofre nuclear power station is given number one priority for SDGE to coordinate with SCE to bring power to an open circuit breaker at the San Onofre bus. SDGE coordinates re-synchronizing with CAISO, which has operational control of the SDGE system. If that process fails, the SDGE system operator will contact neighboring systems and local generators to coordinate re-synchronization and load restoration.

In general, the SDGE system operator makes call-outs, as necessary, to meet the defined roles in the procedure, which covers all aspects of operations during a system restoration. The operations shift supervisor is responsible for coordination with the CAISO and other neighboring utilities for frequency control, depending on what islands are formed.

Automatic load restoration exists and is defined by a WECC mandate. It is coordinated with adjacent systems only by virtue of this WECC mandate. Automatic load restoration takes place at selected frequency set points and time durations.

The CMRC is the overall reliability coordinator directing primary orders to member systems for restoration. SDGE is not a balancing area and therefore takes direction from the CAISO but will also take direct orders from the reliability coordinator, if so directed. Field personnel are not trained to synchronize at buses (generation personnel are familiar with synchronizing generation to the system).

The SDGE operator demonstrated where the electronic and hard copies of the blackstart and restoration plans are kept. SDGE reviews and updates the restoration plan annually. The SDGE

mapboard indicates what units have blackstart capability. SDGE would primarily coordinate and receive direction from the CAISO shift manager. SDGE participates in annual CETAC restoration drills and SDGE's in-house tabletop exercise.

SDGE provides annual training to its system operators in coordination with CETAC. SDGE also provides in-house training on blackstart procedures to ensure each certified operator meets the NERC training requirements. SDGE conducts in-house tabletop drills annually. All SDGE system operators are on schedule to meet the required minimum 32 hours per year of training and drills in system emergencies.

14. Capacity and Energy Emergency Plan

Each balancing authority must have a capacity and energy emergency plan that address the applicable requirements of NERC Reliability Standards EOP-001-0 — Emergency Operations Planning and EOP-002-0 — Capacity and Energy Emergencies.

SDGE is a transmission operator only. CAISO is responsible for all aspects of the capacity and energy emergency plan.

15. Equipment Maintenance and Testing

Transmission and generator owners must ensure that maintenance of transmission lines, substation equipment, transmission protective systems, and generator relays is carried out according to company, regional, and/or NERC requirements.

A "primary" revenue meter provides instantaneous and accumulated real and reactive power readings to an SDGE RTU that delivers the data to the EMS. A "backup" revenue meter provides the same information to tone transmitters; the information is then sent to the EMS on a separate path and fed into the EMS through the local control center RTU. These data are used as "alternate data" in the event that the primary meter fails. Both the primary and alternate data are monitored 24 hours a day. The system operators note any deviation and notify the meter department to resolve. Both meters are calibrated annually by the SDGE meter department with a representative from the interconnected company present. On a typical SDGE interconnection, there is also meter at the opposite end of the line.

SDGE calibrates frequency meters and transducers in the control center every two years when normal maintenance is conducted on the RTUs and other related equipment that supply data to the EMS. The field frequency transducers are calibrated on a site-failure basis only, as indicated when high or low alarms generate an EMS alarm for points that drift out of normal tolerances. Reports of these alarms are given to technicians, who respond for repair and/or calibration.

SDGE has no formal document describing its relay maintenance and testing program; however, the company follows requirements contained in the CAISO tariff. SDGE performs calibration and trip testing of system protection equipment on a two-year maintenance cycle for all types of relays. SPS/RAS maintenance and testing is on a two-year cycle, the same as relay systems. All SDGE transmission lines have two or more relay systems. Transmission buses have one system backed up by local breaker failure and remote transmission line systems, and transmission

transformers have two or more systems. Maintenance personnel obtain authorization from the SDGE system operator prior to performing maintenance. SDGE will not allow transmission relay system maintenance that disables a protection system with the element remaining in service. SDGE uses an Access database to track scheduling and completion of relay testing. The program is on schedule for 2006.

SDGE had 17 relay misoperation occurrences during the period of May 22, 2005 through May 21, 2006. SDGE analyzes all misoperations and takes corrective action. Severe misoperations have an incident report written and disseminated to each section throughout the company. Minor misoperations are reported back by requesting a corrective action authorization to perform the work.

The SDGE system protection engineering department coordinates with interconnected neighbors on mutual agreed relay setting for interconnection relays.

The SDGE substation equipment maintenance practices are described in a document entitled *Transmission Substation Maintenance Practices*. The practices describe the inspection, maintenance, and replacement of transmission substation equipment throughout the transmission substations on SDGE system. These practices are on file with and have been adopted by the CAISO for use on the SDGE system.

Each SDGE transmission substation has one or more digital fault recorders, and most transmission substations have multiple microprocessor relays that can be interrogated for fault location information.

The SDGE transmission line maintenance program includes annual infrared inspection of lines, a wash program in contamination zones, and treatments and inspection for wood poles.

16. Vegetation Management

The transmission operator must have a documented vegetation-management program.

SDGE has a centralized vegetation management program (VMP) managed by the electric transmission and distribution division. The primary purpose of the VMP is to maintain safe distances between all vegetation and the overhead transmission and distribution circuits, in order to comply with the strict clearance requirements of the state of California.

SDGE tracks its vegetation management activities using a vegetation management system (VMS) software to track all field activities (pre-inspection, tree pruning/removal, quality assurance, customer work refusals, field memos, etc.) by geographic area. Using a geographic area approach helps to keep the vegetation management resources in close proximity to the areas where work is needed. There are 133 of these geographic polygons, known as vegetation management areas (VMAs). The VMS has a database of over 400,000 individual trees that have a potential impact on SDGE overhead circuits. All pertinent tree data is regularly updated through each of the work activities mentioned above. Pertinent tree attributes include species, height, growth rate, diameter at breast height, clearance to conductor, conductor voltage class, work type, work restrictions, and property location information. Each tree record is time- and

date-stamped in the VMS when work has been completed. Each one of the 133 VMAs is on an annual cycle for routine inspection; each SDGE transmission circuit is inspected at least once a year for vegetation conflicts. When the inspection process is complete, SDGE issues a work package to a tree contractor to prune or remove the trees identified during the inspection process. After the tree pruning and removal work is completed, SDGE performs a post-trim inspection and audit of the VMA by sending a member from the SDGE quality assurance team to patrol every span of overhead wire in the VMA to ensure the clearance standards are met. The SDGE VMP does not differentiate between work required on tie circuits and internal transmission circuits.

SDGE also uses a designated pre-inspection supervisor who is responsible for implementing the pre-inspection schedule and assigning the appropriate resources to meeting the annual work plan. The SDGE system forester is responsible for the tree pruning and removal schedule and ensuring the appropriate resources are assigned to meet scheduled completion work dates and the overall annual work plan. All vegetation management-related labor is contracted out to companies specializing in these activities. This includes pre-inspection, tree pruning/removal, quality assurance, and brush clearing.

In addition to regular vegetation right-of-way (ROW) inspections conducted by the SDGE vegetation management department, the SDGE transmission construction and maintenance department performs regular inspections for other maintenance-related problems. SDGE maintains ROW maintenance for access to structures in accordance with regional transmission-line maintenance practices, which are filed and approved by SDGE and CAISO.

SDGE uses designated physical reference points of separation to coordinate with adjacent transmission operators. Specific areas of a tie line where maintenance responsibility begins or ends for SDGE are identified via substation, switch, tower number, or other hardware delineation. If there is any question about the responsibility of a section of tie line, the SDGE area forester contacts the adjacent transmission operator to determine the appropriate responsibilities.

Due to the strict vegetation-clearance requirements already mandated by the state of California, SDGE has not made substantial changes to the VMP since the August 14, 2003 blackout. SDGE is in the process of updating the VMP standards to include a few requirements of the new transmission vegetation management standard (FAC-003-1) adopted in early 2006.

SDGE's 2006 VMP is on schedule.

The audit team was very impressed with the SDGE vegetation management program and cited it as a potential example of excellence.

17. Nuclear Power Plant Requirements

Transmission operators must support nuclear power plants in meeting regulatory requirements that allow the plant operators to maintain voltages within design limits and adequate off-site power sources in both normal and abnormal operating conditions (n-1 and system restoration).

There is one nuclear generating station within the SDGE footprint. It is the San Onofre nuclear generating station (SONGS). The SONGS operator and SDGE have an agreement known as the "San Onofre Operating Agreement," for the safe operation of SONGS. This operating agreement specifies the parameters for the safe operation of SONGS with respect to voltage and var procedures, controlling system voltages within the SDGE footprint and borders, safe shutdown power requirements, and plant startup requirements. Other procedures define the operating voltage constraints on the SDGE transmission system.

SDGE, SCE, and the San Onofre engineers have procedures to use available voltage tools to maintain adequate voltage at the 230 kV bus sections at the plant during normal operations. The SDGE system operators monitor the SONGS bus voltage via EMS screens. Precontingency studies conducted in real time alert the system operators to any potential voltage issues in the SONGS area. Postcontingency voltage mitigation is assisted by the automatic operation of a 100 Mvar device at a substation one bus from SONGS. In case of a major disturbance, the device will switch to "voltage mode" if a certain voltage decay threshold is present and will take control to help arrest voltage decay. The SDGE system operators are aware of the power requirements for safe shutdown of the SONGS reactor and the required voltage at the SONGS 230 kV bus.

SDGE schedules work on transmission lines and equipment at San Onofre in accordance with established procedures for routine and emergency switching operations for the SONGS switchyard and minimum operating requirements for the SONGS units. The procedures also establish the operational and jurisdictional boundaries between SDGE and SCE. All work requests involving any transmission facilities at the San Onofre switchyard generates e-mail notification to CAISO, the SCE outage coordination office, and the operations manager at SONGS at least 72 hours in advance of any work.

SDGE has not submitted a voltage excursion report. Pursuant to the *Transmission Control Agreement*, the CAISO is responsible to comply with the reporting requirements of WECC, NERC, and the NRC. SDGE and the SONGS nuclear engineering team would gather and provide CAISO with any information necessary to meet the reporting requirements should a voltage excursion event occur.

SDGE uses normal dial-up phones, satellite phones, and cell phones for communications with SONGS.

SDGE has the joint responsibility with SCE to maintain adequate bus voltages at SONGS. The audit team noted a concern that the voltage requirements for SONGS are contained in the SONGS nomogram, but that information is not available to the SDGE system operators. Procedures are available for the SDGE system operators to reference, but routine training is not provided. The SDGE restoration plan provides a highest priority to start the appropriate blackstart units and establish startup capacity to SONGS; however, SDGE does not provide any specific training on SONGS startup. SONGS has been used as a contingency during regional system restoration training workshops. The audit team is concerned that the SDGE training practices for its system operators are not comprehensive on the overall aspects of operation for SONGS, from routine operations to emergency conditions. The audit team recommends that

SDGE consolidate all training materials with respect to SONGS, coordinate these training materials with SCE, and develop a single comprehensive training module for SONGS.

APPENDIX 1: Critical Energy Infrastructure

The following discussion is presented under private letter to the audited organization only and will not be included within the public version of the report.

APPENDIX 2: Audit Participants

The following discussion is presented under private letter to the audited organization only and will not be included within the public version of the report.

APPENDIX 3: Documents Reviewed

The following discussion is presented under private letter to the audited organization only and will not be included within the public version of the report.

APPENDIX 5

DEPARTMENT OF FORESTRY AND FIRE PROTECTION
Fire Prevention Bureau
2249 Jamacha Road
EL CAJON, CA 92019
(619) 590-3100
Website: www.fire.ca.gov

Re: 2007 SDG&E and CAL FIRE Power Line/Pole Inspections

On Tuesday, August 27th, 2007 representatives from both CAL FIRE and SDG&E met at SDG&E's headquarters to arrange a cooperated effort for inspecting power poles and lines in relation to Public Resources Codes 4292 and 4293. This program was initially started in 2001 as "Operation Santa Ana 2001" This meeting consisted of inspector training and the selection of inspection teams for inspecting SDG&E's power poles and lines within the State Responsibility Areas of San Diego County.

The inspections began on Tuesday, September 4th, 2007 and lasted through September 6th. Three teams were created in the Northern, Central, and Southern areas of the county. The teams were composed of two SDG&E representatives and on CAL FIRE representative. Over the three days, I accompanied one of the teams for the day. The following are the teams by the day and area location:

Tuesday, September 4th, 2007

Northern Team:	Dave Desonia, SDG&E Chris Thompson, SDG&E Tom Shoots, CAL FIRE Preston Fouts, CAL FIRE
Central Team:	Michael Daleo, SDG&E Sean Myott, SDG&E Dave Harris, CAL FIRE
Southern Team:	Bruce Taylor, SDG&E Jim Miles, SDG&E Abby O'Leary, CAL FIRE

Wednesday, September, 5th, 2007

Northern Team:	Dave Desonia, SDG&E Chris Thompson, SDG&E Jose Galeano, CAL FIRE
Central Team:	Michael Daleo, SDG&E Sean Myott, SDG&E Dave Harris, CAL FIRE Preston Fouts, CAL FIRE
Southern Team:	Bruce Taylor, SDG&E Jim Miles, SDG&E Abby O'Leary, CAL FIRE

Thursday, September 6th, 2007

Northern Team:	Dave Desonia, SDG&E
	Chris Thompson, SDG&E
	Jose Galeano, CAL FIRE
Central Team:	Michael Daleo, SDG&E
	Sean Myott, SDG&E
	Dave Harris, CAL FIRE
Southern Team:	Bruce Taylor, SDG&E
	Jim Miles, SDG&E
	Abby O'Leary, CAL FIRE
	Preston Fouts, CAL FIRE

The teams inspected subject power poles and power lines in the wind prone areas as they relate to Public Resource Codes, Section 4292 and Section 4293. Each team was mobilized with an SDG&E vehicle and driver which allowed the CAL FIRE inspector and the second SDG&E inspector to be observant to the poles and lines. Each vehicle was also equipped with a SDG&E laptop to be utilized to gain power pole and power line information immediately.

Throughout the inspections SDG&E and CAL FIRE inspectors noted benefits associated with the co-inspecting. Some notable benefits included, on site enforcement id needed with the property owner, quicker compliance by SDG&E, and on the job training working both ways. Positive feedback from public interaction was also seen and was appreciated to the joint effort between the two entities.

During the three inspection days, the teams inspected a total of 3,414 subject poles and found 27 violations and 11 power line violations. The PRC 4292, line hazard reduction violations was the most observed and documented by SDG&E for abatement. Below is the breakdown of violations by team:

Northern Team:	***PRC-4292***	***PRC-4293***	***Compliant***
Day 1:	1	2	500
Day 2:	1	0	500
Day 3:	2	0	600
Total:	**4**	**2**	**1,600**
Central Team:			
Day 1:	2	0	53
Day 2:	5	0	94
Day 3:	6	4	125
Total:	**13**	**4**	**272**
Southern Team:			
Day 1:	6	1	442
Day 2:	1	2	500
Day 3:	3	2	600
Total:	**10**	**5**	**1,542**
GRAND TOTAL:	**27**	**11**	**3,414**

All noted violations were abated and in compliance by September, 24th, with the exception of two PRC 4293 violations that the property owner would not allow abated. These two violations were force abated and in compliance on October 11th.

During the inspections, the following communities were inspected with the **bold** locations having violations:

North – Bonsall, Chihuahua Valley, De Luz, **Fallbrook**, Lake Henshaw, Mesa Grande, **Palomar Mountain**, **Pala**, Pauma Valley, Ranchita, Santa Isabel, Sunshine Summit, Valley Center, and Warner Springs.

Central – Cuyamaca, Descanso, Harrison Park, **Julian**, **Lakeside**, Mt. Laguna, Pine Hills, **Pine Valley**, **Ramona**, **Rancho Santa Fe**, Whispering Pines, Witch Creek, and Wynola.

South – **Alpine**, Boulevard, **Campo**, Dehesa, Dulzura, Harbison Canyon, **Jacumba**, **Jamul**, Lake Morena/Morena Village, **Live Oak Springs**, Otay, **Potrero**, Rancho San Diego, and **Tecate**.

Overall, SDG&E has done an outstanding job of trimming the vegetation from the power lines and brushing around the poles. SDG&E has been very helpful towards this project and views the entire project as an "independent evaluation" of their vegetation management, maintenance program once again. SDG&E continues to support future inspections in the State Responsibility Areas of San Diego County, as well as through out the year.

As for any future issues, SDG&E has issued a contact list of phone numbers for all of our fire engines, so that as needs arise for clearance issues, SDG&E can be quickly notified and the abatement will be handled quickly.

If you should have any further questions, please feel free to contact me at Monte Vista, Fire Prevention Bureau, and (619) 590-3122.

Respectfully Submitted:

Preston Fouts

CAL FIRE

Fire Captain Specialist
Law Enforcement Officer
Monte Vista Fire Prevention Bureau
San Diego Unit
619.590.3122 OFFICE
619.937.1330 CELL
619.590.3126 FAX
preston.fouts@fire.ca.gov

APPENDIX 6

SDGE

A Sempra Energy utility™

Information for Tree FF1090

Tree ID: FF1090
VMA: 379 - Rainbow 1
Status: LC - Listed & Clear
Species: Sycamore
Growth Rate: Fast
Height: 60.1 to 80 ft.
DBH: 36 to 41.9 in.

Clearance: 10 to 11.9 ft.
Trunks: 1
Pole 1: P213072
Pole 2: P112340
Thomas Bros: 998J7
Reliability Flag: ☐
System Add Date: 5/7/1999 9:13:48 AM

Property Information
Owner:
Address: 1548 RICE CANYON RD, FALLBROOK CA, 92028

Pre-Inspection History

Clearance	Pre-Inspector	Update Time
10 to 11.9 ft.	Jebrail, Jon	1/22/2008 11:33:00 AM
6 to 7.9 ft.	Clemens, Mark	7/18/2007 1:00:03 PM
8 to 9.9 ft.	Klein, Kevin	7/19/2006 3:40:35 PM
8 to 12 ft.	Space, Ben	7/12/2005 8:17:14 AM
4 to 8 ft.	Wloch, Michael	11/17/2004 6:56:34 AM
4 to 8 ft.	Mikulanis, Vince	11/11/2003 8:01:46 AM
8 to 12 ft.	Moi, Fune	1/13/2003 7:48:26 AM
1.5 to 4 ft.	Moi, Fune	1/2/2002 7:56:48 AM
4 to 8 ft.	Flagherty, Patrick	1/25/2001 9:47:19 AM
4 to 8 ft.	Kuchera, Michael	5/7/1999 9:25:03 AM

Visit History

Pruning History

Contractor	Crew Name	Pruning Performed	Clearance	Pruning Date
Davey	Jorge Orellana	Exception.	4.1 to 5.9 ft.	11/13/2007
Davey	James Crowley	Trimmed	10 to 11.9 ft	10/22/2007
Davey	Gustavo Sanchez	Trimmed	10 to 11.9 ft	2/11/2005
Asplundh	Josue Aparicio	Trimmed	10 to 11.9 ft	2/17/2004
Davey	Antonio Prieto	Partial	8 to 9.9 ft.	5/7/2003
Davey	William Holder	Trimmed	10 to 11.9 ft	4/29/2002
Asplundh	LOWRY, J.	Trimmed	8 to 12 ft.	5/1/2000

PRIVATE INFORMATION - DO NOT SHARE WITH OTHER PARTIES

Tree Notes History

Tree Note Description	Note Active	Crew Name	Update Time
Remove direct overhang	☑	Jebrail, Jon	1/22/2008 11:38:57 AM
Poison oak	☑	Klein, Kevin	7/19/2006 3:40:35 PM
Start at 1551 Rice Cyn Rd mailbox-tree in 1st span sw	☐	Space, Ben	7/12/2005 8:17:14 AM
located along Rice Cnyn Rd	☐	Wloch, Michael	11/17/2004 7:19:43 AM

Property Notes Histor

Tree Note Description	Note Active	Crew Name	Update Time
Beware of Dog(s)	☑	Clemens, Mark	7/17/2007 2:30:00 PM
Matt Jane 760-723-4157	☐	Klein, Kevin	7/19/2006 3:44:26 PM
Matt Jane 760 723-4157	☑	Klein, Kevin	7/14/2006 11:39:15 AM
Matt Jane 760-723-4157	☐	Myers, Bob	10/26/2005 2:13:42 PM
Matt Jane 760 723 4157	☐	Space, Ben	7/12/2005 8:20:31 AM
Matt Jane 760-723 4157	☐	Wloch, Michael	11/17/2004 7:45:02 AM
Matt Jane 760-723-4157	☐	Wloch, Michael	11/17/2004 7:45:02 AM

Removal History

Refusal History

APPENDIX 7

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Investigation on the Commission's Own Motion into the Operations and Practices of San Diego Gas & Electric Company Regarding the Utility Facilities linked to the Witch and Rice Fires of October 2007	))))))	Filed Public Utilities Commission November 6, 2008 San Francisco Office I.08-11-006

DAVEY TREE SURGERY COMPANY RESPONSE TO SAN DIEGO GAS & ELECTRIC COMPANY'S DATA REQUEST REGARDING THE RICE FIRE OF OCTOBER 2007

Randy W. Gimple
David Bona
Lynde Selden III
353 Sacramento Street, 16th Floor
San Francisco, CA 94111
Telephone: (415) 391-3911
Facsimile: (415) 391-3898

May 27, 2009

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Investigation on the Commission's Own Motion into the Operations and Practices of San Diego Gas & Electric Company Regarding the Utility Facilities linked to the Witch and Rice Fires of October 2007	))))))	Filed Public Utilities Commission November 6, 2008 San Francisco Office I.08-11-006

DAVEY TREE SURGERY COMPANY RESPONSE TO SAN DIEGO GAS & ELECTRIC COMPANY'S DATA REQUEST REGARDING THE RICE FIRE OF OCTOBER 2007

Davey Tree Surgery Company responds to San Diego Gas & Electric Company's Data Request Regarding the Rice Fire of October 2007, as follows:

Request 1-1

Did DAVEY TREE SURGERY view TREE FF1090 on October 15, 2007?

Response to Request 1-1

Yes.

Request 1-2

If DAVEY TREE SURGERY viewed TREE FF1090 on October 15, 2007, please (i) identify the individuals who viewed TREE FF1090 on October 15, 2007; and (ii) state the clearance between TREE FF1090 and SDG&E's conductors as observed by DAVEY TREE SURGERY on October 15, 2007.

Response to Request 1-2

(i) Jorge Orellana.

(ii) The clearance between the tree and conductors was greater than that required by Public Resources Code section 4293.

Request 1-3

Please provide a full and complete explanation of the entry by DAVEY TREE SURGERY in the TREE HISTORY REPORT for TREE FF1090 of an "Exception" under the category of "Pruning History," which indicates an "Exception" as to "Pruning Performed," a "Clearance" of 4.1 to 5.9 ft. and a "Pruning Date" of November 13, 2007. This explanation should include at least the following information:

a. When this "Exception" was entered by DAVEY TREE SURGERY in the TREE HISTORY REPORT;
b. The reasons why a November 13, 2007 "Pruning Date" was noted by DAVEY TREE SURGERY with respect to this "Exception";
c. Whether DAVEY TREE SURGERY was at the site of TREE FF1090 on November 13, 2007; and
d. Whether DAVEY TREE SURGERY is representing that it observed a clearance of 4.1 to 5.9 ft. with respect to TREE FF1090 as of November 13, 2007.

Response to Request 1-3

The Exception Form for Tree FF1090 was signed and dated November 13, 2007. Pursuant to SDG&E procedures, where a tree is scheduled for trimming but not trimmed, the VMA which includes that tree may not be closed out without an SDG&E Exception Form being executed. The entry "Exception" under the column heading "Pruning Performed," on the document entitled Information for Tree FF1090, and the 11/13/2007 date under the heading on "Pruning Date," were not intended to indicate that any pruning was performed on 11/13/2007. Rather, the 11/13/2007 date is the date that the Exception Form was executed. The reason an Exception Form was executed for Tree FF1090 was because, due to the Rice Canyon Fire and the work that was performed at the direction of SDG&E immediately thereafter, Tree FF1090 was not trimmed in the regular course of work, thus making it an "exception." Therefore, the Exception Form was completed on 11/13/2007 to note that Tree FF1090 was an exception, which was required in order to close out VMA 379.

The observed clearance of 4.1 to 5.9 feet refers to the clearance observed by Mr. Orellana on October 15, 2007.

Request 1-4

Please provide a copy of all DOCUMENTS describing a timeline or schedule for the trimming of vegetation in SDG&E Vegetation Management Area ("VMA") 379 in connection with the tree trim cycle that began on September 1, 2007.

Response to Request 1-4

Davey Tree Surgery Company is aware of only the attached scheduling document and scheduling parameters in its contract with SDG&E, which was previously provided to SDG&E.

CARLSON, CALLADINE & PETERSON LLP

By_____
RANDY W. GIMPLE
Attorneys for DAVEY TREE SURGERY COMPANY

Tree Notes History

Tree Note Description	Note Active	Crew Name	Update Time
Remove direct overhang	☑	Jebrail, Jon	1/22/2008 11:38:57 AM
Poison oak	☑	Klein, Kevin	7/19/2006 3:40:35 PM
Start at 1551 Rice Cyn Rd mailbox-tree in 1st span sw	☐	Space, Ben	7/12/2005 8:17:14 AM
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Property Notes Histor

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Matt Jane 760-723 4157	☐	Wloch, Michael	11/17/2004 7:45:02 AM
Matt Jane 760-723-4157	☐	Wloch, Michael	11/17/2004 7:45:02 AM

Removal History

Refusal History