Southern California Joint Pole Committee
437 So. Cataract Ave. Unit 3
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February 10, 2009

A meeting of the **Pole-Loading ad hoc Committee** took place on the above date, at 9:30 a.m., at the Committee office. Those in attendance were:

Mr. Robert Wolfe	AT&T California (teleconference)
Ms. Paula Haney	NextG Networks (teleconference)
Mr. Larry Chow	So California Edison
Mr. Justin Cashmer	Verizon California (teleconference)
Mr. Jim Eastwood	So California Edison (teleconference)
Mr. Ruben Hauser	City of Los Angeles (teleconference)
Ms. Lupe Hernandez	AT&T Local Serv. (teleconference
Ms. Lynn Prescott	Verizon Wireless (teleconference)
Ms. Jennie Corellla	Committee Staff
Mr. Kyle Levy	Committee Staff

In the absence of Mr. Wolfe, Ms. Hernandez chaired the meeting. She opened the meeting by stating that she, Mr. Cory Autrey, and Ms. Paula Haney worked on creating sections 6.0, and 6.1 to be implemented into the Routine Handbook to address pole loading. She reported that section 6 provided by the NCJPA is a great tool, however, the document contains extensive technical information (see attachment I). She is proposing that the NCJPA document is used as a resource tool/document, with a disclaimer stating that, "this information was not drafted by a profession/structural engineer". This would serve as a reference and source of information. She added that the new section 6.0 and 6.1 (attachment II) was created with the aid of the NCJPA document. She questioned if the members are in agreement that the technical information should be separate. The members agreed.

She stated that the ad hoc should determine how to resolve disagreements, and the bulleted issues on attachment II.

Ms. Hernandez questioned if SCE requests reviewing the calculations prior to proposing pole replacement?

Mr. Chow responded in the affirmative, and stated that the calculations would be necessary for every pole. Ms Hernandez questioned Mr. Chow if SCE requires both calculations – the old pole and the new pole as well? Mr. Chow responded that both calculations would help expedite issues.

Ms. Hernandez inquired if the members had reviewed the proposed sections and had any questions or concerns.

Mr. Chow responded that the OIR has not completed their discussion on pole loading, and there possibly may be changes.

Ms. Hernandez stated that it appears that this section would be a work in progress until the OIR is completed. The implementation into the Routine Handbook is contingent on the OIR completion.

Ms. Hernandez questioned if the CPUC requirement to exchange pole-loading information must commence even if the OIR is not complete? She suggested adding this section to the Routine awaiting OIR completion.

Ms. Prescott stated that in her opinion it should be included in the Routine Handbook and revised when necessary, and/or when the OIR is complete.

The members agreed that the language in the proposed section 6 requires no changes.

This issue is to be on the Board agenda under Unknown Items.

Review of action items:

The meeting adjourned at 10:10 am, until February 2010.

Jennie Corella - Manager of Operations

ATTACHMENT I

POLE AND ANCHOR LOADING – SCJPC TECHNICAL RESOURCE

6.0 Elements of Pole Loading

- Loading District (Light, or Heavy Load District)
  - (See GO 95, Rule 43.1 & 43.2 and Appendix A)
  - Special Loading Districts (High Winds/Fire Area)
- Construction Grade (A-B-C-F) (See GO 95, Rule 42)
- Stability of the soil (Firm Soil, Rock, swamp, etc.) If a pole is to be set in *soft* ground, use short spans and/or increased setting depths to avoid overturning due to wind loading. Under such conditions, unduly short spans or deep settings may often be avoided by rocking-in or keying of poles by use of mud sills or possibly by storm guys. Rocking-in, keying of a pole or installing of mud sills are considered for mutual benefit in all circumstances and shall be a shared expense.
- Pole Height
- Pole Brand above ground to determine actual setting depth and class
  - Poles 20’ to 50' in length, the brand is 10' from pole butt
  - After 1964 poles 55' and longer, the brand is 14' from pole butt
  - Poles 80' and longer 1955-1964, the brand is 15' from pole butt
  - 10' wood stubs, the brand is 9.5' from pole butt
- Date pole set (see date nail on pole or refer to pole record info)
- Angle/pull on poles (horizontal loads).
- Pole Class or pole circumference (diameter X 3.14 = circumference)
- Pole condition (i.e., shell rot, woodpecker holes, split top, large cracks, etc.)
- Shell Thickness (by bore test or removal of existing plug and use of a shell gauge. Poles identified as having decay may have tags affixed describing deterioration).
- Setting Depth (must meet or exceed the capability of the proposed load. New pole installations should be at a depth sufficient to meet the ultimate load capability of the pole. The ultimate bending moment should not exceed the ultimate overturning moment).
- Equipment weights (column loads)
- Height of Attachment (HOA) of all existing and proposed attachments
- Wire and cable types and sizes (diameters for all attachments)
- Span Lengths
- Anchor lead length and direction
- Guy strain (wire size and type)
- Mid Span separation due to Sag Differential (See GO 95, Appendix C)
- Clearance at 130 Fahrenheit temperature for final sag
- Calculated safety factor with calculated load for all attachments

6.1 Pole Loading Definitions / Types of Pole Loading

- Bending Moment / Overturning Moments – Poles should to be classed for bending moment as a pole must resist the wind loading by itself without the aid of supporting conductors or guys. The allowable overturning moment on a pole relates to the holding strength at ground line and the poles may be set to a depth that meets but does not exceed the ultimate loading of the pole class. The acronym to describe bending moment is “BM”

- Vertical Loading – Vertical load is the sum of all the weight on a pole, including conductors, cables, ice, equipment, and the column loading component from guying. The acronym to describe vertical loading is “VL”

- Equally Restrained Pole – 4-way tangent pole with equal type and sized cables and conductors, and in similar span lengths. Example: intersection pole; equal loading (zero-sum) in each direction, which cancels each other.

    - Vertical pole loading and Bending/Overturning moment loading is not required when poles are equally restrained as described above.

- Effectively Restrained Pole – 2-way (or more) dead-end pole with either unequal type and sized cables and conductors, or in dissimilar span lengths. Example: double dead end in two directions 90 degrees to each other with down guys in each direction; could be with different size conductors or cables in different directions. Slack spans are not an effective restraint

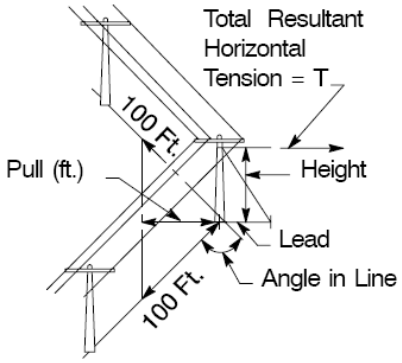
    - Vertical pole loading required

- Corner (double dead end) Pole

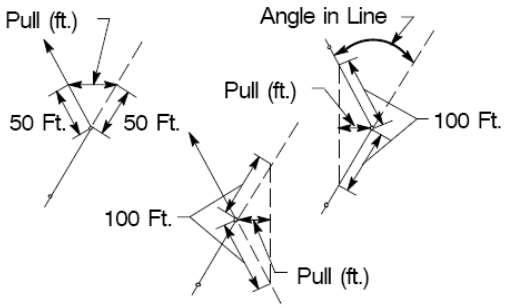
    - Vertical pole loading required

- Angle / Pull Pole – Pole set where conductors and/or cables have a change in direction creating an angle.

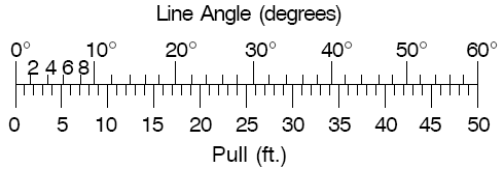
    - Vertical pole loading and Bending Moment/Overturning Moments are required; if either calculation fails, poles should be designed for the worst case scenario.



Example Illustration



Methods of Determining Pull



Scale for Changing Line Angles in Degrees to "Pull"

- Dead End Pole – Where conductors and/or cables terminate in any given direction on the pole
    - Vertical pole loading and Bending Moment/Overturning Moment Loading required
- Tangent Pole – When conductors and/or cables are running in a straight line configuration and the line has three degree's of angle or less and the pole is not guyed
    - Bending Moment/Overturning Moment Loading required

Note: Slack Spans – When un-guyed taps such as services or slack spans exist, consider the moment created by these attachments. Estimate the tension per attachment and multiply by the height of the attachment to obtain the moment. Attachments in the opposite direction of the maximum moment reduce the moment (i.e., services in opposite directions cancel each other). Note: slack cables or conductors are usually installed at less than 75 pounds tension.

6.2 Characteristics of an Overloaded Pole

Characteristics that might indicate potential for overloading:

- Pole: deformed, bowed, bending, severe cracking, deteriorated
- Guys/anchors: Significant imbalance in guy/anchor loading, evidenced by loose guys in conjunction with extremely taut guys; anchors pulled out of ground
- Conductors: numerous large conductors/cables, significant differences in the length of spans between adjacent poles, improper sag or tension
- Extraordinarily complex loading systems that appear to have evolved as a "layering" of incremental changes – without analysis of integrated loading

6.3 Pole Safety Factors (SF) - Grade A Construction - Joint Poles with Power and C Class
(Refer to GO 95 rule 42 for more information).

- Min. of 4.0 SF for new joint pole sets with electric and C Class facilities
- Min. of 4.0 SF for electric transmission poles with C Class facilities (new sets and for existing poles)
- Min. of 2.67 SF for existing jointly owned poles with distribution power and class communication facilities

6.4 Pole Inspection - Shell thickness / Deterioration impacts to pole loading

Some poles have tags affixed to them identifying deterioration of the pole below or above ground. When such tags exist, the Initiating Member may request a Receiving Member to provide pole test data to incorporate in their pole loading calculations. In cases where sufficient pole test data is not available, Members can agree to acceptable compensation to collect the data; Section 1.2 special agreement or use of billing items 19L 1-5, which ever is appropriate.

The chart (Figure 1) outlines what percentage of a poles maximum loading allowance would be reduced by based on remaining shell thickness.

Note: Many Members install tags on the poles which provide information regarding reduced shell thickness below ground or wood damage above ground. Some tags indicate a pole is being considered for pole reinforcement or for pole replacement. Contact the applicable joint owner(s) for the proper tag interpretation.
Note: Some Members have posted pole tagging information on www.scjpc.net.

The following chart provides guidance on how to take remaining shell thickness data and establish what percentage of the pole strength remains.

Pole Strength Example

Example:

Testing a pole with a 30-inch circumference at the groundline. Internal decay is found in the center of the pole. The shell-thickness gauge measures an existing average shell thickness of 2 inches.

1. Place one end of a ruler at the 30-inch increment of the pole circumference scale.
2. Place the opposite end of the ruler at the 2-inch increment of the shell-thickness scale.
3. The percent of the original pole strength can now be determined. The pole strength is 88% of the new or original pole strength.

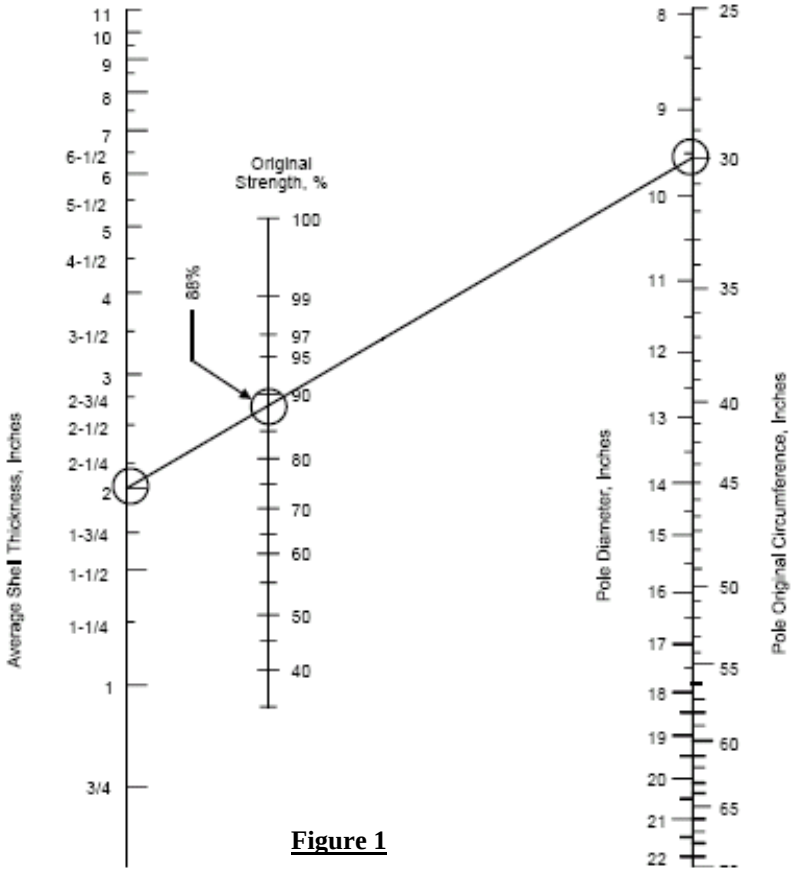


Figure 1

Note: For pole circumferences greater than 70" (i.e., generally cedar poles larger than 80 feet, Class H3) apply the formula below to determine the percentage of original strength.

% original strength = 1 – [1-(shell thickness / pole diameter) x 2]

6.5 Pole Setting Depth – Setting Poles Deeper

Setting a pole deeper than what is described in the "Grade and Space Chart by Pole Height" in Section 16 can establish a higher pole loading maximum allowance, which will accommodate future construction, and is considered mutually beneficial.

When poles are set deeper, the increased setting depth (in feet) shall be noted on the Form 2 within the “Location and Nature of Work” utilizing Section 6.6. The increased setting depth adds to the common area and reduces the usable space divided among owners for their exclusive use.

Note: The overall pole height above ground would be less than depicted in the “Grade and Space Chart by Pole Height” on page 16-2. Example: A 45’ pole set 2’ deeper requires the top of pole be depicted on the Form 2 as 37’, not 39’. The usable space would be 13’, not 15’ and the common area would be 32’ not 30’.

If a pole is to be set in soft ground, it is recommended to decrease span lengths and/or increase setting depths to decrease overturning moment due to wind loading.

ATTACHMENT II

POLE LOADING – SCJPC PROPOSED SECTION 6

6.0 Scope

Construction and maintenance of poles, anchors, guys and other attachments under the SCJPC Routine shall at all times conform to the laws of the State of California, Order of the Public Utilities Commission (GO 95) and rules and regulations of other legally authorized bodies having jurisdiction. Members initiating construction on jointly owned poles are responsible for performing total pole loading as described in GO95, rule 91.2 to ensure poles meet the applicable minimum safety factor.

6.2 Pole Loading Collaboration Between Members

Any Member planning to perform work on a pole is responsible for gathering all pole/anchor data necessary to perform total pole loading. When the type of facilities in the field cannot be readily identified, the Initiating Member shall contact applicable pole owners to request facility information/maps (wire sizes, equipment sizes) to aid in completing total pole loading calculations prior to submitting a Form 2 Preliminary JPA. (Refer to GO 95 Rule 44.2)

A Member requesting facility information from another owner(s) shall not construct until all facility information has been identified from all parties and total pole loading calculations have been completed with confirmation that the safety factor meets GO 95 minimum requirements.

The Initiating Member is responsible to address and reconcile any pole loading issues identified by other owner(s). In cases where Members disagree with each others loading calculations, Engineering representatives shall work together to verify the data used (facility information, spans, HOA, etc) and establish a final calculation.

The Initiating Member must submit completed Pole Calculation Data Sheets to other owner(s) along with the Form 2 Preliminary JPA.

(NOTE: we need to further discuss how to handle the following scenarios)

- Overloaded pole due to Initiating Member proposed attachment.
- Overloaded pole prior to Initiating Member proposed attachment.
- Documenting pole overload resolutions and sharing information
- Pole replacements

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June 17, 2009

A meeting of the **Wind Loading ad hoc Committee** took place on the above date, at 12:50 p.m., at the Committee office. Those in attendance were:

Ms. Sherri Goetz	Southern California Edison
Ms. Lynn Prescott	Verizon Wireless
Mr. Steve Rodriguez	T-Mobile USA
Mr. Dennis Walls	City of Los Angeles
Mr. Robert Wolfe	AT&T California (teleconference)
Mr. Cory Autrey	Sprint-Nextel
Ms. Lupe Hernandez	AT&T Wireless
Ms. Paula Haney	NextG Networks
Mr. Mahendra Garg	City of Anaheim
Mr. Ihab Ibrahim	City of Banning
Mr. Malcolm Brown	Verizon Wireless
Mr. Adolph Gonzales	Southern California Edison
Mr. Daniel Lippert	City of Burbank
Ms. Jean Baccus	Committee Staff
Ms. Angela Pranata	Committee Staff
Ms. Jennie Corella	Committee Staff

The meeting opened at 1:00 pm by soliciting a nomination for the member utility that would serve as chairperson of this ad hoc committee. Mr. Autrey nominated Mr. Bob Wolfe of AT&T California. Mr. Wolfe accepted the nomination. There were no other nominations or objections; therefore, Mr. Wolfe is the chair of this ad hoc committee for 2009.

Mr. Wolfe opened by stating that those members who do not participate in the ad hoc committee meetings and dialogue, would live by those decisions agreed upon by the participating members. He added that the ad hoc is not to create new pole loading science, but to examine existing science.

As a start to the newly formed ad hoc committee, Mr. Wolfe presented a NCJPA Section 6 draft to the committee for their review (see attached). He inquired if any members opposed to collaboration with the NCJPA in regards to wind loading. There were no oppositions. He added that the NCJPA does not oppose either.

Ms. Prescott proposed that at this first meeting, perhaps a list should be established of those major and minor issues that the ad hoc would be addressing in preparation for future meetings and the direction in which the ad hoc is going.

Mr. Wolfe discussed pole loading and attachment versus new build. He stated that the OIR should set rules in regards to wind loading to maintain CPUC limitations.

He stated that in the South the Santa Ana winds create a different environment in contrast to other areas in California. He added that the terms pole loading and wind loading suggest a different connotation. In pole loading there are vertical loads as well as other type loads. In wind loading there is the issue of bearing the speed of wind. There are also restraining utilities that restrain poles from failing.

Mr. Wolfe discussed the diagrams he provided in section 6 drafts to the members.

Mr. Gonzales inquired if the NCJPA defines practices from a construction standpoint in sections of the NCJPA routine handbook.

Mr. Wolfe responded that they meet GO 95 minimum standards for construction.

Mr. Gonzales stated that the standards that Mr. Wolfe is presenting are standards utilized today within his organization. In that the South would be exchanging information with the North, Mr. Gonzales questioned what Mr. Wolfe has experienced in the past two years in regards to loading poles as opposed to the construction of facilities out in the field.

Mr. Wolfe responded that the NCJPA is working on identifying these issues. He noted those Northern power companies that collaborated in the section 6 draft. They are PG&E, TID, SMUD, and MID. He reported that the Northern members agreed to attach their loading calculation sheets to their paper work. Mr. Wolfe shared the different agreements in regards to pole loading that the NCJPA were in collaboration.

Ms. Prescott stated that a primary concern for her is communication and how members would relay this type information amongst themselves. Another issue is if members would accept different types of software for pole loading calculations, and should the type of software utilized by members be standardized? What is to ensure that the wind loading calcs are relayed to all members involved?

Mr. Gonzales inquired if the NCJPA is attempting to have all members utilize one standard pole loading software.

Mr. Wolfe responded that it is highly unlikely and that it would be difficult deciding on specific software that would satisfy all NCJPA members. All members are aware of the general order and take responsibility of their action or lack of.

Mr. Wolfe asked the members to provide him with any agenda items they would like addressed within the ad hoc committee. He added

that the ad hoc would be collaborating with the NCJPA in regards to pole loading. Mr. Garg stated that he would like an item number assigned to, "Evaluate Wind-loading Programs".

There were no miscellaneous items.

Review of action items:

- Members to provide Mr. Wolfe with any items to be added to the agenda.

The meeting adjourned at 2:10 pm, until July 29, 2009.

Jennie Corella - Manager of Operations

Attachment

POLE/ANCHOR LOADING AND PLACEMENT

6.0 Scope *(approved by committee)*

Construction and maintenance of poles, anchors, guys and other attachments under the NCJPA Routine shall at all times conform to the laws of the State of California, Order of the Public Utilities Commission (GO 95) and rules and regulations of other legally authorized bodies having jurisdiction, insofar as any or all of the foregoing may be applicable. Members initiating construction on jointly owned poles are responsible for performing total pole loading as described in GO95, rule 91.2 to ensure poles meet the applicable minimum safety factor.

6.1 Elements of Pole Loading *(approved by committee)*

Components essential for performing total pole loading calculations:

- Loading District (Light, Intermediate or Heavy Load District)
  - (See GO 95, Rule 43.1 & 43.2 and Appendix A)
  - Special Loading Districts (High Winds/Fire Area)
- Construction Grade (A-B-C) (See GO 95, Rule 42)
- Stability of the soil (Firm Soil, Rock, swamp, etc.) If a pole is to be set in *soft* ground, use short spans and/or increased setting depths to avoid overturning due to wind loading. Under such conditions, unduly short spans or deep settings may often be avoided by rocking-in or keying of poles by use of mud sills or possibly by storm guys. Rocking-in, keying of a pole or installing of mud sills are considered for mutual benefit in all circumstances and shall be a shared expense.
- Pole Height
- Pole Brand above ground to determine actual setting depth and class
  - Poles 20’ to 50' in length, the brand is 10' from pole butt
  - After 1964 poles 55' and longer, the brand is 14' from pole butt
  - Poles 80' and longer 1955-1964, the brand is 15' from pole butt
  - 10' wood stubs, the brand is 9.5' from pole butt
- Date pole set (see date nail on pole or refer to pole record info)
- Angle/pull on poles (horizontal loads). Is this also considered column loading??)
- Pole Class or pole circumference (diameter X 3.14 = circumference)
- Pole condition (i.e., shell rot, woodpecker holes, split top, large cracks, etc.)
- Shell Thickness (by bore test or removal of existing plug and use of a shell gauge. Poles identified as having decay may have tags affixed describing deterioration).
- Setting Depth (must meet or exceed the capability of the proposed load. New pole installations should be at a depth sufficient to meet the ultimate load capability of the pole. The ultimate bending moment should not exceed the ultimate overturning moment).
- Equipment weights (column loads)
- Height of Attachment (HOA) of all existing and proposed attachments

- Wire and cable types and sizes (diameters for all attachments)
- Span Lengths
- Anchor lead length and direction
- Guy strain (wire size and type)
- Mid Span separation due to Sag Differential (See GO 95, Appendix C)
- Clearance at 130 Fahrenheit temperature for final sag
- Calculated safety factor with calculated load for all attachments

6.2 Pole Loading Definitions / Types of Pole Loading *(approved by committee)*

- Bending Moment / Overturning Moments – Poles should to be classed for bending moment as a pole must resist the wind loading by itself without the aid of supporting conductors or guys. The allowable overturning moment on a pole relates to the holding strength at ground line and the poles may be set to a depth that meets but does not exceed the ultimate loading of the pole class. The acronym to describe bending moment is "BM"

- Vertical Loading – Vertical load is the sum of all the weight on a pole, including conductors, cables, ice, equipment, and the column loading component from guying. The acronym to describe vertical loading is "VL"

- Equally Restrained Pole – 4-way tangent pole with equal type and sized cables and conductors, and in similar span lengths. Example: corner pole; equal loading (zero sum) in each direction, which cancels each other.
    - Vertical pole loading and Bending/Overturning moment loading is not required when poles are equally restrained as described above.

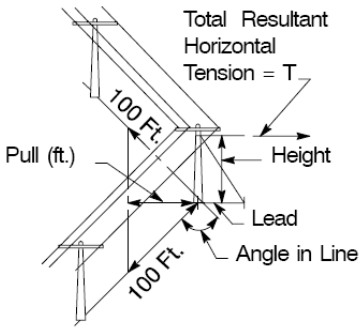
- Effectively Restrained Pole – 2-way (or more) dead-end pole with either unequal type and sized cables and conductors, or in dissimilar span lengths. Example: double dead end in two directions 90 degrees to each other with down guys in each direction; could be with different size conductors or cables in different directions. Slack spans are not an effective restraint.

    - Vertical pole loading required

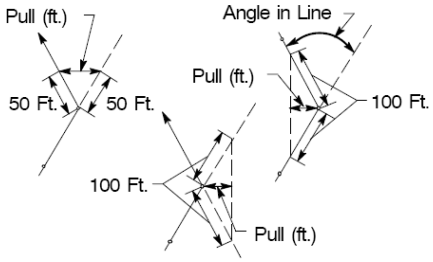
- Corner (double dead end) Pole
    - Vertical pole loading required

- Angle / Pull Pole – Pole set where conductors and/or cables have a change in direction creating an angle.

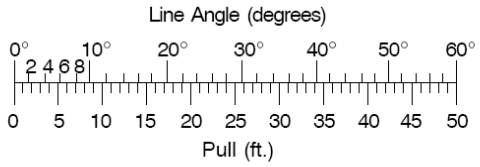
    - Vertical pole loading and Bending Moment/Overturning Moments are required; poles should be sized for the worst case scenario



Example Illustration



Methods of Determining Pull



Scale for Changing Line Angles in Degrees to "Pull"

- Dead End Pole – Where conductors and/or cables terminate in any given direction on the pole
    - Vertical pole loading and Bending Moment/Overturning Moment Loading required

- Tangent Pole – When conductors and/or cables are running in a straight line configuration and the line has three degree's of angle or less and the pole is not guyed
    - Bending Moment/Overturning Moment Loading required

Note: Slack Spans - When un-guyed taps such as services or slack spans exist, consider the moment created by these attachments. Estimate the tension per attachment and multiply by the height of the attachment to obtain the moment. Attachments in the opposite direction of the maximum moment reduce the moment (i.e., services in opposite directions cancel each other). Note: slack cables or conductors are usually installed at less than 75 pounds tension.

6.3 Characteristics of an Overloaded Pole *(approved by committee)*

Characteristics that might indicate potential for overloading:

- Pole-bending deformation, severe cracking
- Significant imbalance in guy loading, evidenced by loose guys in conjunction with extremely taut guys
- Presence of numerous large conductors/cables
- Significant differences in the length of spans between adjacent poles
- Extraordinarily complex loading systems that appear to have evolved as a "layering" of incremental changes – without analysis of integrated loading
- Pole aging effects apparent

6.4 Pole Safety Factors- Grade A Construction - Joint Poles with Power and C Class *(approved by committee)*

Refer to GO 95 rule 42 for more information.

- Min. of 4.0 SF for new joint pole sets
- Min. of 4.0 SF for electric transmission poles with C Class facilities (new sets and for existing poles)
- Min. of 2.67 SF for existing jointly owned poles with distribution power and class communication facilities

The acronym to describe safety factor is “SF”. Example: SF= 3.69

6.5 Pole Inspection - Shell thickness / Deterioration impacts to pole loading *(approved by committee)*

Members are responsible for determining the structural integrity of the wood pole prior to constructing. As such, intrusive pole testing may be required to identify how much remaining shell thickness remains.
Some poles have tags affixed to them identifying deterioration of the pole below or above ground.

The chart (Figure 1) outlines what percentage of a poles maximum loading allowance would be reduced by based on remaining shell thickness.

Note: Many Members install tags on the poles which provide information regarding reduced shell thickness below ground or wood damage above ground. Some tags indicate a pole is being considered for pole reinforcement or for pole replacement. Contact the applicable joint owner(s) for the proper tag interpretation.
Note: Some Members have posted pole tagging information on www.ncjpa.org.

The following chart provides guidance on how to take remaining shell thickness data and establish what percentage of the pole strength remains.

Pole Strength Example

Example:

Testing a pole with a 30-inch circumference at the groundline. Internal decay is found in the center of the pole. The shell-thickness gauge measures an existing average shell thickness of 2 inches.

1. Place one end of a ruler at the 30-inch increment of the pole circumference scale.
2. Place the opposite end of the ruler at the 2-inch increment of the shell-thickness scale.
3. The percent of the original pole strength can now be determined. The pole strength is 88% of the new or original pole strength.

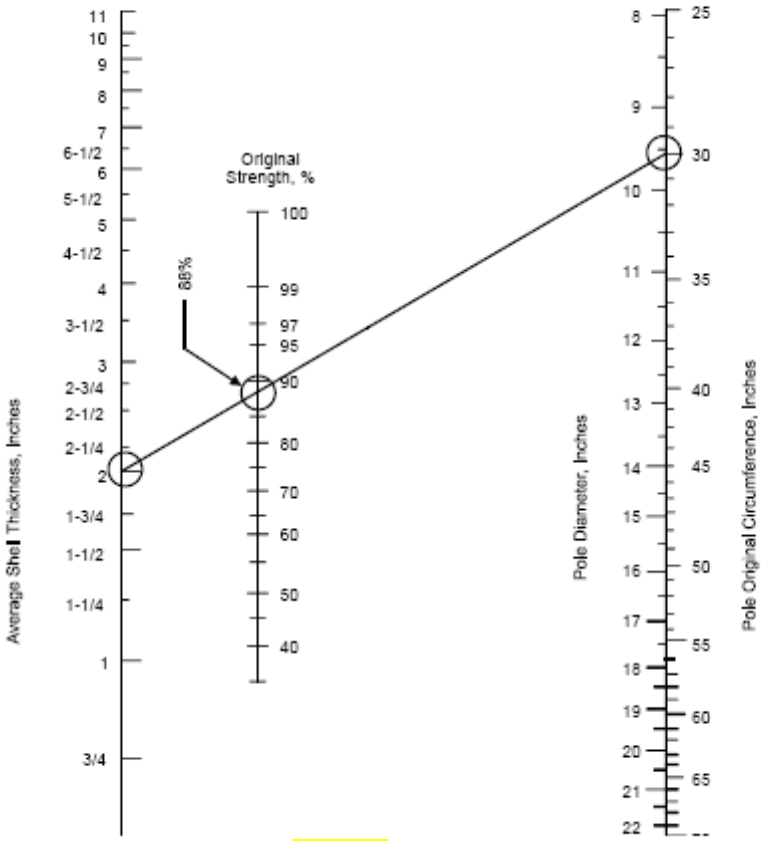


Figure 1

Note: For pole circumferences greater than 70" (i.e., generally cedar poles larger than 80 feet, Class H3) apply the formula below to determine the percentage of original strength.

$$\% \text{ original strength} = 1 - [1-(\text{shell thickness} / \text{pole diameter}) \times 2]^4$$

6.6 Pole Setting Depth – Setting Poles Deeper ***(approved by committee)***

Setting a pole deeper than what is described in the "Grade and Space Chart by Pole Height" in Section 16 can establish a higher pole loading maximum allowance, which will accommodate future construction is considered mutually beneficial.

When poles are set deeper, the increased setting depth (in feet) shall be noted on the Form 2 within the "Location and Nature of Work" utilizing Section 6.6. The increased setting depth adds to the common area and reduces the usable space divided among owners for their exclusive use.

Note: The overall pole height above ground would be less than depicted in the "Grade and Space Chart by Pole Height" on page 16-2. Example: A 45' pole set 2' deeper requires the top of pole be depicted on the Form 2 as 37', not 39'. The usable space would be 13', not 15' and the common area would be 32' not 30'.

If a pole is to be set in *soft* ground, it is recommended to decrease span lengths and/or increase setting depths to decrease overturning moment due to wind loading.

6.7 Pole Loading Collaboration Between Members ***(not yet approved by committee)***

An initiating Member planning to perform work on a pole, is responsible for gathering all pole/anchor data necessary to perform total pole loading (when pole loading is required). When facilities in the field cannot be readily identified, Members are encouraged to request facility information/maps (wire sizes, equipment sizes) from Members (prior to submitting a Form 2) to aid in completing total pole loading calculations.

Initiating Members have the following options in how they approach or submit information to other Members:

1) A Member in the pre-planning stage of a project (before a Preliminary Form 2 is submitted to Members) may approach any Member to request facility information. The receiving Member shall be compensated for their actual costs; billed under a separate invoice and not through the NCJPA office.
2) Form 2 package submitted with complete total pole loading data sheets and there is no formal request for a receiving Member to respond with loading information. If a receiving Member identifies a calculation that differs, and a poles safety factor still passes, no compensation shall be provided to that receiving Member.
3) Form 2 package submitted with complete total pole loading data sheets and a receiving Member finds that a location's calculation is incorrect and actually prompts pole replacement, the receiving Member shall be compensation for the correction, per Authorized Cost Item 19Q(1).
4) The initiating Member shall provide:

    - existing pole information on load data sheets (i.e. size and class of pole, spans, heights of attachments, known facility descriptions)
    - proposed facility information
    - pictures or pole tagging information, if available

    The receiving Member shall access their own facility records and shall perform calculations using their own loading tool and respond with documented total pole loading calculations sheets. The receiving Member shall be compensated per location, per Authorized Cost Item 19Q(2).

5) Pole loading reviews or performing calculations by a receiving Member for the benefit of a Tenant is fully reimbursable per Section 17; See Non-Owner Cost Item 900.

(The info below in red may or may not be required based on the above changes-please review)

Receiving Members need to either:

1) Review total pole loading calculations and reply with any pertinent differences in loading calculations or
2) Utilize elements of the initiating Member loading data (i.e. pole size, class, span lengths, etc.) to calculate their own load when requested by the initiating Member. The initiating Member shall list billing item xx to a location where loading data is being requested for, or
3) If loading information is related to a tenant related project, the receiving Member being requested for data is allowed to recoup their actual costs per Section 17; refer to Billing Item 900.

   When pole loading data is returned to the initiating Member, it shall be included with the Form 2 response.

An Initiating Member is responsible to address and reconcile any pole loading issues identified by a receiving Member (related to their project) regardless of the status of the Form 2.

6.8 Documentation of Total Pole Loading or Pole Loading ***(not yet approved by committee; 11.0 needs verifying)***

Initiating Members shall include total pole loading data and overall safety factor on the Joint Pole Authorization **Form 2 Final** for the following section numbers:

- Section 3.1, 4.0, 4.1, 4.3, 4.4
- All of Section 7
- Sections 9.1, 10.5, 10.6, 10.8B and 11.0 involving multiple services (Bob Wolfe to research)

The format of depicting total pole loading on the Form 2 shall be as followed:

- For Bending Moment

  o OU1=BM xxxxx OU2=BM xxxxx TN = BM xxxxx SF = 3.69

- For Vertical Loading:

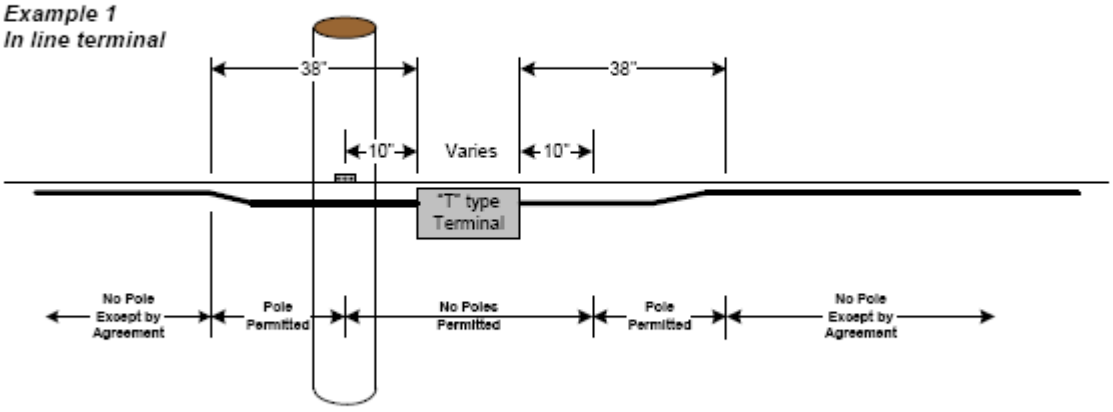
  o OU1=VL xxxxx OU2=VL xxxxx TN = VL xxxxx SF = 5.78

  Note: “TN” is the acronym for a “Tenant”. Substitute OU 1, OU2, etc. with the applicable utility codes involved.
  Refer to Section 20.

6.9 Pole Placement Recommendations (C Class Facilities) *(not yet approved by committee)*

Except for "same hole sets" and equipment installations other than shown below, a joint meet with telephone company representative maybe required to reach an agreement. Measurements are for new sets only. This is only a guide for pole replacements and to be used as a guideline of possible pole locations that are permitted and not permitted.

Example 1
In line terminal



While not all poles can be replaced in the same hole, here are some guidelines to be considered when deciding the location of the new pole.

Southern California Joint Pole Committee
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July 29, 2009

A meeting of the **Pole Loading ad hoc Committee** took place on the above date, at 9:00 a.m., at the Committee office. Those in attendance were:

Mr. Allen Young	NextG Networks (teleconference)
Ms. Debra Okano	AT&T Mobility (teleconference)
Ms. Sharon James	NextG Networks (teleconference)
Mr. Justin Cashmer	Verizon California (teleconference)
Mr. Dennis Shipley	Verizon California (teleconference)
Mr. Randall Starkey	Time-Warner Cable (teleconference)
Ms. Lynn Prescott	Verizon Wireless
Mr. Dennis Walls	City of Los Angeles
Mr. Scott Hunter	City of Los Angeles
Mr. Robert Wolfe	AT&T California (teleconference)
Mr. Cory Autrey	Sprint-Nextel
Ms. Lupe Hernandez	AT&T Wireless
Ms. Paula Haney	NextG Networks
Mr. Mahendra Garg	City of Anaheim
Mr. Larry Chow	Southern California Edison
Mr. Malcolm Brown	Verizon Wireless
Mr. Adolph Gonzales	Southern California Edison
Mr. Art Peralta	Southern California Edison
Mr. Daniel Lippert	City of Burbank
Ms. Jean Baccus	Committee Staff
Ms. Angela Pranata	Committee Staff
Ms. Jennie Corella	Committee Staff

Mr. Wolfe opened the meeting at 9:10 am and allowed for introductions. He then referred to the proposed commission decision on a 272-page report divided into four categories pertaining to infrastructure providers and CIPs, and power companies. Category four proposes utilities share loading information, and New rule, Order 95, 44.2 will propose procedures related to pole over-loading including the sharing of pole loading information among utilities. He added that he intends on reading the decision in its entirety very soon, and stated that this commission information should aid this ad hoc on discussion of pole loading, and aid the ad hoc in creating a process to share loading information amongst members.

The members then reviewed the NCJPA draft document pertaining to pole loading (to view the document, please refer to the June 17, 2009 minutes of this ad hoc committee).

Mr. Wolfe stated that the draft created by the SCJPC would come close to the NCJPA draft.

Ms. Hernandez commented to Mr. Wolfe that in her opinion, the draft consists of information available in GO 95. Her question is does the committee desire to place GO 95 verbiage in the Routine Handbook? She questions if the ad hoc should go into such detail as GO 95.

Mr. Autrey stated that he has read the document and agrees with Ms. Hernandez.

Mr. Wolfe responded that it is not his intention to place this information in the handbook, but as a tool to open discussion. He added that today, with the technology available, personnel do not fully grasp the concepts of pole loading. There is a need to gain an understanding of the true nature of pole loading. He further added that he feels the two years of energy put into this document in the North could benefit the SCJPC as they move forward in addressing pole loading.

Ms. Okano inquired as to the objective of the NCJPA when creating the pole loading draft.

Mr. Wolfe responded that there is so much entailed in pole loading that a majority of the members do not clearly comprehend it. It is the objective of the NCJPA that the draft, serve as an aid to understanding the process and requirement to ensure the pole loads are correct.

Mr. Walls stated that in his opinion, the committee does not need to review the methods of calculating pole loads. He added that he has read the proposed agenda submitted by Verizon Wireless, and he is in agreement with Verizon and the direction suggested (see attachment I).

Ms. Prescott stated that if an agenda were created with specific items to address, then the members would gain a better understanding of the direction the committee is moving. She added that the draft created by the NCJPA could become an item on the agenda; since the time invested in creating the document could only prove to benefit the SCJPC and the information in the document would be referred to though out the meetings.

Mr. Wolfe agreed and stated that he would like to request a co-chair to assist him with this ad hoc committee, in that geographically it is difficult for him to be completely effective and interact with the ad hoc members on a face-to-face basis. He recommends a power utility.

Mr. Chow stated that SCE is present only to answer questions, and provide information. They cannot under any circumstances, be a part of the decision making in regards to pole loading at this time.

Mr. Walls responded that he (City of Los Angeles) and Mr. Garg (City of Anaheim) are in attendance, and both being power utilities could serve as co-chair. Mr. Walls then stated that he would serve as co-chair.

It was suggested that the NCJPA document could serve as an addendum or appendix to the Routine.

Mr. Garg stated that the issue on the agenda, submitted by Verizon Wireless, that holds his greatest is number seven, the reviewing of different loading software etc. He inquired if the ad hoc committee could come to a decision on one standard pole loading software to be utilized by all members.

Mr. Wolfe responded that this issue was discussed within the NCJPA, and what was determined is that the calculations from a number of software were very close in comparison. Therefore, it was agreed that the members would accept one another's calculations. He added that in his opinion, he does not foresee the members all agreeing and accepting one pole loading software as a standard.

Ms. Prescott stated that she would like to add to the newly created agenda, 1) evaluating pole load programs, and 2) review all information included in document 6.0 submitted by the NCJPA. She added that communication among members in regards to pole calculations should be addressed.

Ms Haney stated that what she would like addressed is the situation of receiving failures from utilities, and the issue of requesting a re-calculation.

The ad hoc agreed to create an agenda (see attachment II) including issues on the list submitted by Verizon Wireless, and the document submitted by AT&T California. The title of this ad hoc has been changed from "Wind Loading" to "Pole Loading ad hoc committee".

Mr. Walls identified those relevant issues on the Verizon Wireless agenda. He agreed with Mr. Wolfe that members would not agree on one specific software to be utilized by all members, therefore; he questioned if the committee should create a list of acceptable pole calculation software.

Ms. Prescott added that creating a list of acceptable software could serve as a good aid in regards to pole loading to new members to the committee.

As co-chair, Mr. Walls clarified the objective(s) for the Pole Loading ad hoc committee. The primary objective is to develop a process to communicate pole-loading information. Second, review the document provided by the NCJPA. Third, what is the role of the JPC office in regards to the process? In his opinion, the above three items are primary.

Mr. Autrey proposed the fourth item to be collaboration between members.

Ms. Haney stated that she would like to propose a greater disciplined pole loading process. She added that various members use their specific processes. She further added that some member's staff deviates from their organization's step process. She if of the opinion that

a process should be defined, outlined and adhered to by that utilities entire staff.

Ms. Hernandez stated that the only utility currently requesting pole loading is SCE, with the City of Anaheim commencing in requesting this information as well. However, in her opinion pole-loading information would eventually become part of the JPA process, but is not at this time.

Ms. Haney responded that the one power utility requesting pole loading information is very large, and the largest utility in the committee. Therefore, she is of the opinion that a standard process should be set.

Mr. Autrey stated that there would be many standard processes, starting with the initial process of communication amongst members.

The members discussed different issues of pole loading. In summation, Mr. Walls stated that he would meet with Mr. Wolfe and work on an agenda for next month. He would send the agenda to the ad hoc members for their review and comments.

There were no miscellaneous items.

Review of action items:

- Members to review document submitted by AT&T California
- Mr. Walls and Mr. Wolfe to collaborate on agenda items for next month's meeting.

The meeting adjourned at 11:05 am, until August 26, 2009.

Jennie Corella - Manager of Operations

Attachment I

Pole Loading Committee

1) Put together agenda for upcoming meeting(s) by soliciting all of the Committee Members for their input on how they see this committee getting started, progressing and perhaps the end result.
2) Put together a list of goals or resolutions we would like to accomplish in this ad hoc Committee.
3) Outline the process for transacting loading information as we know it today.
4) Compile list of issues on the current process; i.e.: what works, what doesn't work.
5) Discuss improving or redeveloping the process of communicating the load information:
    a. How to request existing loading information (cable, equipment, weight, diameter, etc.) from current owners of record on a pole.
    b. How to provide proposed load information to other owners on pole.
    c. Continue to show loading information on JPA;
    d. Submit load calculations with JPA?
6) Discuss how to access or obtain previous load calculations and/or pole inspection information.
7) Review different loading software, including which members use particular software and/or which members will accept calculations from particular software.
8) What to do with loading calculations upon completion:
    a. Should we create a database to store and share information

b. Research the cost of storing the information
c. How would we manage the data
d. Should the load calculations not be stored and managed by the JPC, but rather, held internally within each Utility along with their respective pole engineering, as is currently done.

Attachment II

Pole Loading Committee Agenda

6) Item 1494: Develop a process to communicate pole loading information (sec 6.7 & Lynn's # 3-6)
    i. Current process
    ii. Proposed process
        1. A non-owner of a pole wants to purchase interest
        2. Pole replacement
        3. JPA time frames
7) Review of scope (Sec 6.0-6.6, 6.10)
8) SCJPC Office role
9) Item 1493: Evaluate Pole-loading programs- City of Anaheim (6/17/2009)
10) Documentation and storage of pole loading information (sec 6.8 & Lynn's # 8)

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August 26, 2009

A meeting of the **Pole Loading ad hoc Committee** took place on the above date, at 9:00 a.m., at the Committee office. Those in attendance were:

Mr. Randall Starkey	Time-Warner Cable (teleconference)
Ms. Lynn Prescott	Verizon Wireless
Mr. Dennis Walls	City of Los Angeles
Mr. Scott Hunter	City of Los Angeles
Ms. Patti Ringo	ExTeNet Systems
Mr. Cory Autrey	Sprint-Nextel
Mr. Don Beckermann	MCI Telecom (teleconference)
Mr. Larry Chow	Southern California Edison
Mr. Brian Flynn	Southern California Edison
Mr. Adolph Gonzales	Southern California Edison (teleconference)
Mr. Art Peralta	Southern California Edison
Mr. Kyle Levy	Committee Staff
Ms. Angela Pranata	Committee Staff
Ms. Jennie Corella	Committee Staff

Mr. Walls opened the meeting by allowing for introductions. The first order of the meeting was the *presentation by Mr. Art Peralta on pole loading calculation methods performed by Edison*. He distributed work sheets to the members (see attachments). He then proceeded to explain the manual pole loading calculation method. He started with explaining wind loading calculations for conductors (attachment I). He then explained wind on pole moment and ultimate bending moment by section modulus for a *solid* circle (attachment II). He added that one must take the moment of the pole (pole without attachments), the load the conductor is producing and add both factors and divide it into the bending moment that the pole can allow to carry and this is what creates your safety factor (attachment II). The pole moment is measured at the ground line level. Mr. Chow inquired if there are instances where the pole moment is measured above ground line. Mr. Peralta responded in transmission poles. He added that as the length of the pole increases the pole moment moves up the pole.

Mr. Peralta then proceeded to interpret bending moment by section modulus for a *hollow* circle to arrive at a safety factor (attachment III).

Mr. Peralta answered questions posed by the members in an attempt to better understand the pole loading calculations performed by SCE.

Mr. Chow stated that different pole load software applications take the same data and arrive at different results.

Mr. Peralta responded that they could be applying different values. An example is the use of different tension values, which could affect the outcome results.

Mr. Walls inquired if the formulas presented by Mr. Peralta are the same formulas applied by GO 95.

Mr. Peralta responded that Go 95 is vague in regards to the type of equations they use for their examples. Some are similar, but some formulas are not listed in GO 95. GO 95 is minimum requirements.

The members discussed the situation of when two members run calculations, and the results differ. How do the two parties come to an agreement? It is agreed that this situation requires discussion for a remedy in future meetings.

After the SCE presentation, Mr. Walls addressed the agenda. The first topic on the agenda is *Sharing of Information between Members*, a) types of facilities on poles – 1) JPC or 2) keep between involved members. Mr. Walls stated that the DWP perspective is that this is something that should be between members and not the JPC office.

The members are in agreement. Ms. Prescott stated that the JPC office does not maintain any other engineering information currently, and should not be accountable.

Mr. Chow stated that in sharing information, that information must be meaningful to the receiving members in order to utilize the information.

Ms. Prescott stated that members must be aware of the correct parties to communicate with in order to obtain or relay information. She added that perhaps a contact list should be created for pole loading and/or pole deterioration information.

The members discussed the values and specifications of the facilities they attach to poles. It was agreed to solicit the values and specifications of facilities members are attaching to poles from all member utilities.

The next topic is *Methods of Calculation*, a) Should there be a requirement for acceptable software applications, or b) Only requirement-loading results must comply with GO 95? The members discussed pole-calculating software, and agree that there are a multitude of programs available.

The members discussed the different software currently utilized by members.

In summation, Mr. Walls stated that from the DWP perspective, any specific software program(s) should not be designated as the required acceptable program(s).

The fourth item on the agenda is *Submitting of Pole Loading Information a) Submit JPC, or b) Submit to individual companies*? Mr. Walls stated that the DWP perspective is that this information should be submitted to individual companies. The members agreed.

The fifth item is *Storage of pole loading information, a) store at JPA, or b) store at individual companies.* Mr. Walls stated that the perspective of DWP is the same as the fourth item on the agenda.

Mr. Chow stated that the OIR might mandate all activity information related to SCE facilities to be stored and maintained by SCE. He added that possibly the pole records might note the action date and the safety factor resulting from the pole loading calculation by a specific member.

Mr. Walls stated that DWP prefers to maintain this information individually. Ms. Prescott stated that one might read the pole card and note the safety factor, and assume that since the calculations are recent and have an acceptable safety factor that the pole is safe.

The sixth topic on the agenda, *Resolution of disagreements a) Resolved at JPC, or b) Resolved between disputants?* Again, the DWP perspective is that the issue should be resolved between disputants. The members also agreed on this issue with Mr. Walls.

It was suggested that when soliciting the members for a list of values and specifications of the facilities attached to pole, that the spreadsheet provided by SCE be used as an example or template to aide members in providing their information.

The members discussed the documentation and sharing of pole loading information. Mr. Peralta remarked that sections 6.7 and 6.8 of the pole loading draft submitted by AT&T California appears to provide an answer and method to the question of sharing and documenting information.

The members reviewed and discussed the above-mentioned sections and agreed to discuss it in depth at the next meeting.

There were no miscellaneous items.

Review of action items:

- Members to provide all values, general characteristics, (weight, diameter) and specifications of their facilities normally attached to poles in a current program.
- Add to agenda the review of NCJPA draft section 6.7 and 6.8.

The meeting adjourned at 11:15 am, until September 22, 2009.

Jennie Corella - Manager of Operations

Section Modulus of a Hollow Circle
8 Pound Wind Criteria - Hand Calculation
(As calculated by LoadEstimator software)

Background

Pole Information & Field Measurements

- **Species:** = Douglas Fir (DF)
- **Length:** = 80 Feet
- **Class:** = 2
- **Year:** = 2009
- **Design Criteria:** = 8 psf
- **Construction Grade** = B (Solely equipped by SCE)
- **Brand AGL** = 3 Feet
- **Pole Length AGL:** = 70 Feet

Note: Pole Length above AGL Calculation
On all Poles Greater than or equal to 60 feet in length, the brand is located 13 feet above the butt of the pole. So if the brand is measured in the field at two feet AGL, you would know the pole is embedded 10 feet in the ground.

13 Ft above the Butt – 3 Ft AGL = 10 Feet BGL (Embedded)
Pole Length AGL = Length of Pole – Embedded Length
= 80 Ft. – 10 Ft.
= 70 Feet AGL

- **Pole GL Circ.:** = 49.12 inches
- **Pole GL Dia.:** = 15.635 inches

Conductors

Phase Level	Height Above Ground	Conductor Size	Number of Conductors
Top	69 ft. 6 in.	336.4 kcmil all Al.	2
Middle	63 ft. 6 in.	336.4 kcmil all Al.	2
Bottom	57 ft. 6 in.	336.4 kcmil all Al.	2

Calculation(s):
To calculate the total wind load on conductors, use the following formula:

Wind Loading of Conductors

Conductor Size	Wind Loading per foot* (lb/ft)	X	Number of Conductors	X	Average Span Length (ft)	X	Height Above Ground (ft)	=	Wind Load on conductor (M_{wc}) (lb-ft)
336.4 kcmil all Al.	0.444	X	2	X	200	X	69.5	=	12,343.20
336.4 kcmil all Al.	0.444	X	2	X	200	X	63.5	=	11,277.60
336.4 kcmil all Al.	0.444	X	2	X	200	X	57.5	=	10,212.00
							Total (TM_{wc})		**33,833**

Attachment II

Wind on Pole Moment

$$M_{wl} = P H^2 \frac{(C + 2c)}{72 \pi}$$

M_{wl} = wind load moment on pole
P = wind load (lbs) = 8 lb/ft^2.
H = height above ground (ft) = 70 ft.
C = groundline circumference (in) = 49.12 in.
c = top circumference (in) = 25 in.

$M_{wl} = 8$ lb/ft^2 · (70 ft)^2 · [(49.12 in + 2 · 25 in) / 72 π]
$M_{wl} = 39200$ lb · (99.12 in / 72 π)
$M_{wl} =$ **17,178 lb-ft**

Ultimate Bending Moment by Section Modulus for a Solid Circle

$$M_b = \frac{S \times f}{12}$$

S = Section Modulus of a Solid Circle
$S = \pi (D^3) / 32$

$S = \pi \times (15.63591606)^3 / 32$
$S = \pi \times 3{,}822.698014 / 32$
$S = 3.141592654 \times 3{,}822.698014 / 32$
$S = 375.2924999$

$$M_b = \frac{S \times f}{12}$$

$M_b = 375.2924999 \times 8000 / 12$

$M_b =$ 250,195 lb-ft Same as LoadEstimator.mdb

Safety Factor

$$S.F. = M_b / (TM_{wc} + M_{wl})$$

S.F. = 250,195 / (33,833 + 17,178)
S.F. = 250,195 / 51,011

S.F. = 4.90

Attachment III

Ultimate Bending Moment by Section Modulus for a Hollow Circle

$$M_{bh} = \frac{S_h \times f}{12}$$

Section Modulus of a Hollow Circle

$$S_h = \pi/32 \; \frac{D^4 - (D-2T)^4}{D}$$

S_h = Section Modulus of a Hollow Circle

$$S_h = \pi/32 \; \frac{D^4 - (D-2T)^4}{D}$$

$$S_h = \pi/32 \times \frac{15.63591606^4 - (15.63591606 - 2x1)^4}{D}$$

$$S_h = 3.141592654/32 \times \frac{15.63591606^4 \, (15.63591606 - 2x1)^4}{15.63591606}$$

$$S_h = 3.141592654/32 \times \frac{25{,}198.36852}{15.63591606}$$

S_h = 3.141592654/32 x 1,611.569698

S_h = 158.215

Ultimate Bending Moment by Section Modulus for a Hollow Circle

$$M_b = \frac{S_h \times f}{12}$$

$$M_{bh} = \frac{158.215 \times 8.000}{12}$$

M_{bh} = 105.477

Adjusted Safety Factor with Damage

$$S.F. = M_{bh} / (TM_{wc} + M_{wl})$$

S.F. = 105,477 / (33,833 + 17,178)

S.F. = 105,477 / 51,011

S.F. = 2.07

Attachment IV

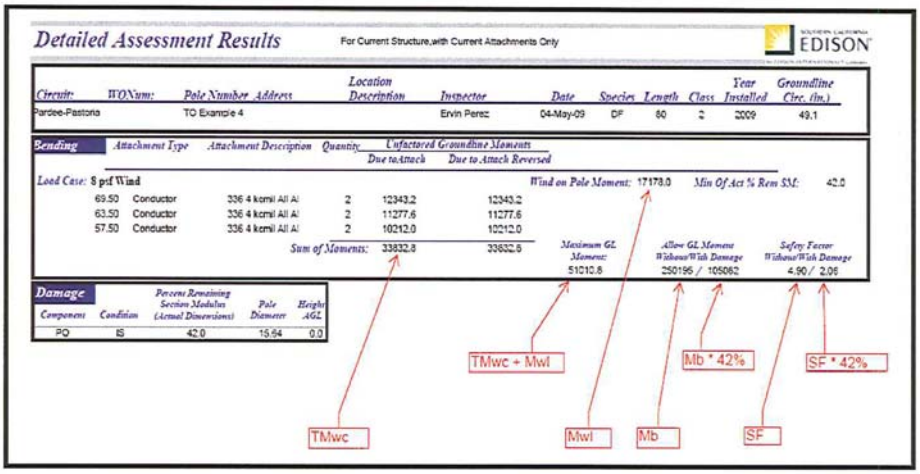
Percentage Factor

% of Ultimate Section Modulus Solid Circle, with Hollow Damage

= 105,477 / 250,195 = 42.1%

% of Solid Circle vs. Hollow Circle (section modulus)

= 158.3 / 375.3 = 42.1%



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September 16, 2009

A meeting of the **Pole Loading ad hoc Committee** took place on the above date, at 1:15 p.m., at the Committee office. Those in attendance were:

Mr. Robert Wolfe	AT&T California
Ms. Lynn Prescott	Verizon Wireless
Mr. Dennis Walls	City of Los Angeles (teleconference)
Mr. Cory Autrey	Sprint-Nextel
Mr. Mahendra Garg	City of Anaheim
Mr. Larry Chow	Southern California Edison
Ms. Shawn Henderson	AT&T Mobility
Ms. Paula Haney	NextG Networks
Mr. Alan Young	NextG Networks
Mr. Art Peralta	Southern California Edison
Mr. Kyle Levy	Committee Staff
Ms. Angela Pranata	Committee Staff
Ms. Jennie Corella	Committee Staff

Mr. Wolfe opened the meeting and allowed for introductions. He then asked the members to review the minutes from the previous meeting to refresh their memories.

Ms Prescott referred to page 3 of the last meeting. She stated that she is in agreement with Mr. Walls, and added that the statement in the sentence is not clear. She would provide the corrected statement to Ms. Corella for editing to the minutes.

The members discussed the maintenance of pole loading calculation records and the remaining safety factor. The members originally agreed that the SCJPC office should not be responsible to maintain this type information.

Mr. Wolfe stated that this would eliminate placing a benchmark on the pole record. He added that he views the record information as linear starting when the pole was placed. The information follows transactions and what is loaded onto the pole. He added that the safety factor is not the true safety factor, but merely a benchmark. As you follow the transactions and loading, you are able to follow how the safety factor reduces.

Mr. Chow stated that this ad hoc is not at the place of knowing what in regards to pole loading, is to be recorded on the pole records. He

believes there is no agreement or consensus on this issue and what information should be captured.

Mr. Wolfe stated that to maintain the actual pole load calculations would take up too much space on the database. He added that pole load calculation information is unnecessary, however, the safety factor is relevant. He stated that any information maintained could be subpoenaed. There is a specified period for maintaining records before the records could be destroyed.

Mr. Young stated that if an NG pole fails, and they are audited by the CPUC, the only information they have to provide is the safety factor and not the calculations reflecting how they arrived at that specific safety factor. He inquired at how could NG demonstrate that the calculations were performed correctly, and/or what it was based on?

Mr. Wolfe responded that there is a record and that the pole would never remain static and would degrade through time. He added that if a member attached and notates the remaining safety factor is 3.25; he would surmise that the pole is in good condition.

Mr. Chow stated that if SCE attaches within their own space, the attachment is noted in the SCE internal database, but not in the JPC database, therefore, the noted safety factor on the JPC pole record is not a true reflection and/or benchmark.

Mr. Walls stated that he is not sure that DWP would validate the safety factor on a JPC record if the record were subpoenaed in a lawsuit.

After discussing the minutes from the previous meeting, Mr. Wolfe then addressed the agenda (see attachment) where Mr. Wolfe captured issues from the prior meeting. He stated that he identified the negatives from the meeting. In regards to the AT&T Wireless comment, he added that he is in agreement that the Routine Handbook is merely a transaction manual. Sprint-Nextel agrees with AT&T Wireless.

Mr. Walls referred to bullet three and stated that what he meant is that DWP does not feel they should dictate to other utilities what software program(s) are allowed or disallowed. Therefore, there is no need to analyze different pole loading methods and programs.

Mr. Chow stated that in regards to bullet four, this is no longer the situation, and SCE would participate in the pole loading decisions at the JPC.

Mr. Wolfe stated that in regards to bullet five, AT&T California is now of the opinion that if the representative is not knowledgeable in engineering, the experts on this subject within their organization could attend the meetings to aid in participation.

Lastly, Mr. Wolfe commented on bullet six. He stated that the question is why there is a disconnect in calculations between power and communication? He reported that in the NCJPA members ran calcs using the same scenario, and compared results. The results were close enough to accept.

Mr. Chow stated that the members agreed with Mr. Walls in that members should not be given a list of acceptable programs. The choice of pole loading programs should be a business decision within that respective organization.

Mr. Wolfe commented that if continually there is a difference in calculations, then the members should work together to determine what is causing a difference in safety factor results.

Mr. Chow added that the ad hoc members should determine the value, or if there is any value to maintaining the safety factor information on pole records.

Mr. Wolfe then discussed agenda item: Loading information exchange. He inquired as to how and what information would the member's exchange? He added that in the North members freely exchange information amongst one another.

Mr. Walls stated that DWP is contemplating a browser where a pole number is entered and pole-loading information would populate the required fields. He added that some items on a pole are not necessarily tied to a pole number yet and probably will not be for years to come. However, other items such as transformers, guys, anchors, etc. are tied to poles, as well as maps.

There was no major discussion among the members on the handling of tenant information.

Mr. Wolfe then discussed retention of loading information (safety factor at time of review). He reported that the CPUC OIR office is establishing a five-year retention requirement for audit purposes.

Mr. Wolfe stated that when the NCJPA addressed the pole loading issue, each utility brought with them an expert in the field to aid in the discussion.

Mr. Autrey stated that originally the members discussed bringing their respective loading personal to the next meeting, but wanted to ensure that the pole-loading meeting was the only meeting that transpired that day.

Mr. Wolfe questioned if members had any further comments on the NCJPA draft six.

Mr. Peralta responded that in his opinion, portions could be taken from section seven of the draft and incorporated into SCJPC policy.

Mr. Wolfe stated that since information is now communicated to members via the SCJPC.net web site, the information could be transmitted via the web.

Ms. Prescott inquired as to how the agenda would be formulated for the next meeting. She proposed concentration on values, or

discussing how members are to communicate information amongst one another. She added that by limiting what the ad hoc concentrates on could aid in a quicker resolution to any specific issue.

Mr. Chow proposed mimicking how the NCJPA created scenarios and tested different software programs to determine if the results are similar and/or acceptable. This could create a foundation toward exchanging and accepting one another's software program calculation results.

There were no miscellaneous items.

Review of action items:

There were not action items.

The meeting adjourned at 2:30 pm, until October 20, 2009 at 9:30 am.

Jennie Corella - Manager of Operations

Attachment

Pole Loading AD-Hoc Committee

Agenda 9/16/2009

Agenda input solicited by committee:

Negatives identified in prior meetings.

- **AT&T Wireless** does not agree that information available in GO 95 needs to be placed into the SCJPC Routine Handbook. (Representative)
- **Sprint-NEXTEL** does not agree that information available in GO 95 needs to be placed into the SCJPC Routine Handbook. (Representative)
- **DWP** does not agree that reviewing methods of pole loading and calculations is needed.
- **SCE** has indicated that they will not under any circumstance participate in decisions made in pole loading at the SCJPC, at this time. SCE participation is to be limited to answering questions and provide information. What impact will this position have on any product created by the committee?
- **AT&T CA.** does not feel that many sitting members of the committee are not qualified to discuss and evaluate various aspects of pole loading. Many representatives are unfamiliar with engineering principals and requirements in performing this activity. As such AT&T CA. feels a review of elements and types of pole loading is essential prior to the creation of rules/agreements via the SCJPC.
- **NextG** has indicated disagreements in calculations (failures) and requests for recalculations are an issue. NextG has indicted the need greater discipline in pole loading processes be identified.

- **Others?**

Comments:

Current understandings of members; Each member state what their current understanding are relative to pole loading acquisition of information and loading processes under SCJPC. Is there any reference in the Routine Handbook that pertains to pole structural capacities? Space and grade allocations seem to be the norm in SCJPC omitting details that can lead to construction of facilities leading to pole failures.

Pending CPUC Mandated high fire risk areas are being established that will lead to new standards in loading requirements due to WIND. i.e. Light to Intermediate, Intermediate to Heavy. New wind standards may include increase worse case wind speeds in excess of 100MPH.

Comments:

Loading information exchange

- SCJPC approved methods for communicating Pole Loading Information. 1) Loading sheets/calculations. 2) Records of facilities 3) access to facility information on each pole/s and facilities under review. Access to information shall be best practice? I.e.; U.S. Mail, electronic transmission, picked up by requesting member or posted on line at SCJPC, provided/exchanged in field. This requirement is under review by various participants' legal departments.
- CPUC has set a fifteen-day window to process request for information relative to poles owned and owner/s facilities (includes pole specific information via Test & Treat). While still under discussion the 15 days appears to be time frame identified by the commission. This requirement is under review by various participants' legal departments.
- TN facilities and information. Owner holding the TN contact agreement shall be responsible for communicating with Tenants in requests for loading information? Pole attacher's owner or tenants are obligated to comply with the rules of GO 95.
- In coming tenant loads are evaluated by owners, TN information should be retained and made available upon request.

Comments:

Retention of loading information (Safety Factor at time of review)

- **CPUC OIR** is establishing a five (5) year retention requirement for audit purposes.
- **Members each have internal** guidelines speaking to the retention of information created in engineering centers. (Project files, job files)
- **Permanent Records** members maintain records. Records differ from project files and jobs. Pole Loading calculations and remaining Safety Factors of existing poles can only be construed as a record snap shot in time. Such information should be available and be considered a benchmark for new calculation and evaluations. The pole/s will continue to age. Undocumented layers of facilities and facility upgrades will distort any/all records.

Comments:

SCJPC Office does the SCJPC office and staffs have any role to play in loading and engineering procedures between members?

Comments:

SCJPC WEB does WEB Site have the capacity to create a Pole Loading Section on lines for members use?

Comments:

NCJPA Section Six (6) Review Version 10

Current Draft version is 11 and will be provided.

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October 20, 2009

A meeting of the **Pole Loading ad hoc Committee** took place on the above date, at 9:30 a.m., at the Committee office. Those in attendance were:

Mr. Robert Wolfe	AT&T California (teleconference
Ms. Lynn Prescott	Verizon Wireless
Mr. Dennis Walls	City of Los Angeles
Mr. Scott Hunter	City of Los Angeles
Mr. Joe Orona	City of Anaheim (teleconference)
Ms. Maryam Farajzadeh	City of Vernon (teleconference)
Mr. Cory Autrey	Sprint-Nextel
Mr. Brian Flynn	Southern California Edison
Mr. Art Peralta	Southern California Edison
Ms. Lupe Hernandez	AT&T Local Serv/ATT Comm.
Ms. Shawn Henderson	AT&T Mobility
Ms. Paula Haney	NextG Networks (teleconference)
Mr. Don Beckermann	MCI Comm/Metro (teleconference)
Mr. Kyle Levy	Committee Staff
Ms. Angela Pranata	Committee Staff
Ms. Jean Baccus	Committee Staff
Ms. Jennie Corella	Committee Staff

Mr. Wolfe opened the meeting and allowed for introductions. He then read to the members an internal AT&T California memo as an FYI in regards to pole loading and the exchanging of information among members. It pertains to the CPUC pre-decision and the OIR. The memo reads, *"Please cascade to your teams as appropriate the attached is effective immediately in California. The CPUC has issued a ruling requiring all utilities to share data necessary to perform pole-loading calculations upon request within 15 days. In addition existing pole loading calculations must be made available to authorized joint use pole occupants and/ or to the CPUC upon request also within 15 days. We must track the request for pole loading information and maintain those logs for a minimum of 5 years. The log may be in whatever form that suits the region. An actual logbook, an Excel spreadsheet or something you currently have in place would work. The log must be made available to the CPUC upon demand."* He added that by sharing this internal memo with the ad hoc members might aid the committee in their task of arriving at a

process of sharing pole loading information. He further added that if a utility is unable to provide information within the required 15 days, they must provide the requesting party with a sufficient cause for the delay. Therefore, utilities could no longer ignore pole loading calculation information requests.

Mr. Wolfe stated that based on this information from the CPUC, AT&T California was able to complete their pole loading draft sections 6.7 and 6.8. He added that he would like to share this information with the SCJPC as aid in creating the pole loading process in the South.

The ad hoc then reviewed the latest NCJPA draft sections 6.7 and 6.8 (see attached). Mr. Wolfe stated that primarily, pole replacements are performed by the power utilities and questioned if the power utilities are now requesting his organization to provide loading calcs. He added that to his knowledge this is not a requirement in the South since the replacing party has ample information to formulate a calculation.

The members discussed the first paragraph on 6.7. Mr. Wolfe stated that the first step is to gather data by pulling records and visiting the site.

Mr. Wolfe stated that communications techs are not very familiar with power facilities and at times facilities are difficult to identify. He added that this would create members contacting one another frequently to identify what is out in the field. However, he added if a member does not respond in a timely and reasonable fashion, the initiating members might move forward with their JPA.

Mr. Wolfe commented on the fourth paragraph that states you cannot start construction without receiving approval, and the pole loading is calculated.

He concluded that the paragraphs are a result of the collaboration of the NCJPA.

Mr. Peralta inquired if Mr. Wolfe could provide the members with the contact names of the utility/communication/cable personal for any inquiries in regards to facilities. He added that contacting the correct party is a primary obstacle due to the work volume within SCE.

Mr. Wolfe responded that he would provide a list of information to Ms. Pranata to upload to the SCJPC.net website to become available to the joint members.

Mr. Walls displayed the information and map provided by LADWP and uploaded to the web. He stated that perhaps this could serve as an aid to members when creating contact information to share with fellow members.

The members also viewed the contact information provided by SCE, which is in a different format.

Mr. Walls noted that the primary members that should provide contact information and maps are SCE, LADWP, Verizon California and AT&T California. The aforementioned utilities have multiple contact

locations. The remaining members normally have one point of contact that is readily available to answer questions and provide assistance.

The members discussed providing digital photos to one another as an aid in identifying facilities and pole loading calculations.

The members discussed the facility specifications template provided by SCE, and solicited from other members. Mr. Peralta stated that by utilizing the specs sheet, members could identify facilities by their number.

The members then reviewed *"Pre=Planning (Prior to submitting a Form 2 or no Form 2 is required)".* Mr. Wolfe stated that in requesting data for a solely owned pole, the requesting member should compensate the requested party for their time. However, once the pole is a jointly owned pole than both parties are to reciprocate in the exchange of pole loading information.

The members then discussed *"Form 2 Package submitted – Receiving Member(s) Review".* Mr. Wolfe stated that this is a two-tier action response. He reported that minor differences in the calculations are acceptable provided the safety factor is within GO 95 requirement. He added that if one party requires re-calculations, these paragraphs outline if members may bill one another for the additional calculations. The NCJPA has an authorized cost for this scenario.

Mr. Peralta inquired of Mr. Wolfe if 6.7 were currently in effect in the NCJPA. Mr. Wolfe responded that it is still in draft form. He added that he believes this would be approved the following week.

Mr. Peralta commended Mr. Wolfe on a job well done, and inquired if the SCJPC would be implementing sections into their plan.

Mr. Walls responded that in his opinion in concept it is a good draft.

Ms. Prescott inquired of Mr. Wolfe if in the NCJPA, when a Form 2 is submitted are the wind loading calculations included? He responded that currently all members are required to perform loading calcs, but the information is not exchanged. What is noted on the form is the bending moment configuration if available.

Ms. Hernandez inquired if when she sends her calculations to a power utility, is that power utility mandated to perform their calculations as well to ensure that her calculations are correct?

Mr. Wolfe responded that GO 95 does not state re-calculations. However, it would be prudent for the power utilities to verify calculations.

Mr. Peralta stated that when the Form 2 is submitted to SCE, and there are calculations, it is likely that SCE would not perform the calcs again. However, if there were something out of the ordinary, than SCE would re-calculate.

Mr. Wolfe inquired if SCE is concerned with the ramifications if they are audited. There was no response.

Mr. Peralta inquired if the original NCJPA draft submitted included section 6.8. Mr. Wolfe stated that he would research for the latest section 6.8 drafts and send both 6.7 and 6.8 to the ad hoc members.

Mr. Walls stated that what is required for the sharing of pole loading information are maps reflecting the different areas/districts and the associated direct contact person.

Mr. Peralta proposed members review sections 6.7 and 6.8 of the NCJPA draft and provide suggestions for changes or acceptance since there is limited time on creating a method to address the pole loading issue.

There were no miscellaneous items.

Review of action items:

- Mr. Wolfe to send NCJPA draft sections 6.7 and 6.8 to Ms. Corella who in turn would email to ad hoc members.
- Members to review sections in preparation for next meeting.
- City of Los Angeles, SCE, AT&T California and Verizon California to provide their respective area maps and associated contact names to JPC office.
- Ad hoc members to bring pole calculations forms utilized within their organizations.
- Mr. Walls to provide JPC office drawing/diagrams (scenario) for testing calculations forms.

The meeting adjourned at 11:15 am, until October 29, 2009 at 9:00 am, which is to be a WebEx meeting.

A meeting at the JPC office for November 17, 2009 at 9:30 am has been scheduled.

Jennie Corella - Manager of Operations

Attachments

10/06/2009 Draft

6.7 Pole Loading Collaboration between Members

An initiating Member planning to perform work on a pole, is responsible for gathering current pole/anchor data necessary to perform total pole loading (when pole loading is required) prior to submitting a Form 2 to other Members. Note: Not all types of construction will require the creation of a Form 2 Intent.

When facilities in the field cannot be readily identified, Members shall contact the applicable pole owner(s) to request facility information/maps (wire sizes, equipment sizes) so that total pole loading calculations can be determined before submitting a Form 2 (Per GO 95 rule 44.2).

The Initiating Member is responsible to address and reconcile any pole loading issues identified by a receiving Member. In cases where Members disagree with each others loading calculations, Engineering representatives shall work together to verify the data being used is accurate and shall establish a final calculation.

Any Member requesting facility information from another Member(s) shall not construct until all facility information has been identified from all parties and total pole loading calculations have been completed with confirmation that the safety factor of the pole meets GO 95 requirements. (See Section 6.4)

Pre-Planning (Prior to submitting a Form 2 or no Form 2 is required)

A Member in the pre-planning stage of a project (when facilities cannot be readily indentified from a site visit) shall approach any applicable Member to request facility information. The receiving Member may be compensated for their actual costs for gathering and providing such information; billed under a separate invoice and not through the NCJPA office.

If scope of work does not require a Form 2 to be created, the Member performing loading calculations shall retain the total pole loading information for a minimum of five years.

Form 2 Package Submitted - Receiving Member(s) Review

When a Form 2 package is submitted with complete total pole loading data sheets and there is no formal request for a receiving Member to perform loading calculations, the following may take place:

- A receiving Member may choose to review calculations at their own expense for comparison purposes. If a component of the calculation differs from the initiating Members calculation, yet the poles safety factor still meets GO 95 requirements, the receiving Member shall respond with updated information and no compensation shall be provided to that receiving Member; assuming the initiating Member used previously provided information.

- If the receiving Member performs a calculation at their own expense for comparison purposes and finds that a location's calculation is not accurate and prompts pole replacement, the receiving shall respond with documented pole loading calculations. Member identifying this situation shall be compensated for the correction, per Authorized Cost Item 19Q(1).

When a Form 2 package is submitted with complete total pole loading data sheets and there is a formal request for a receiving Member to review total pole loading calculations, the following applies:

- The Initiating Member shall add item 19Q(1) to applicable pole locations on the Form 2 when a review of total pole loading information is requested by another Member.

- The receiving Member shall review the total pole loading calculations and respond with either concurrence or shall reply with their updated information.

Reviewing Pole Loading Calculations (For the Benefit of a Tenant)

Pole loading reviews related to tenant attachments can be billed to the Member responsible for the Tenant's attachments; fully reimbursable per Section 17.1. See Non-Owner Cost; Item 900.

6.8 Documentation of Total Pole Loading (Pole Loading) ***(approved by committee on 08-26/2009)***

Initiating Members shall include total pole loading data and existing safety factor on the Joint Pole Authorization **Form 2 Final** for the following section numbers:

- Section 3.1, 4.0, 4.1, 4.3, 4.4
- All of Section 7
- Sections 9.1, 10.5, 10.6, 10.8B

The format of depicting total pole loading on the Form 2 shall be as followed:

- For Bending Moment

  o OU1=BM xxxxx OU2=BM xxxxx TN = BM xxxxx SF = 3.69

- For Vertical Loading:

  o OU1=VL xxxxx OU2=VL xxxxx TN = VL xxxxx SF = 5.78

  Note: "TN" is the acronym for a "Tenant". Substitute OU 1, OU2, etc. with the applicable utility codes involved.
  Refer to Section 20. "OU" would be replaced with the involved joint pole owner's utility code; on the Form 2.

Note: The retention of the calculated remaining Safety Factor on the Form 2 Final is intended to provide a snapshot in time of a pole(s) condition at that time under the finalized circumstances and is only intended to be a reference point for future consideration. New construction on the same pole(s) at a later date will initiate a re-evaluation of the pole per GO 95 Rule 44.2 & 44.3. (This note has not yet been approved by the pole loading committee)

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October 29, 2009

A **Teleconference** meeting of the **Pole-Loading ad hoc Committee** took place on the above date, at 9:00 a.m., at the Committee office via WebEx. Those on conference via WebEx were:

Mr. Robert Wolfe	AT&T California
Ms. Lynn Prescott	Verizon Wireless
Mr. Dennis Walls	City of Los Angeles
Mr. Scott Hunter	City of Los Angeles
Mr. Ruben Hauser	City of Los Angeles
Mr. Joe Orona	City of Anaheim
Ms. Maryam Farajzadeh	City of Vernon
Mr. Dana Fabing	City of Lompoc
Mr. Brian Flynn	Southern California Edison
Mr. Art Peralta	Southern California Edison
Ms. Lupe Hernandez	AT&T Local Serv/ATT Comm.
Ms. Shawn Henderson	AT&T Mobility
Ms. Paula Haney	NextG Networks
Mr. Randall Starkey	Time-Warner Cable
Mr. Kyle Levy	Committee Staff
Ms. Jennie Corella	Committee Staff

Mr. Walls opened that meeting at 9:05 and reported that co-chair Mr. Wolfe would be providing a revised version of the NCJPA draft 6.7 and 6.8 for review by the ad hoc committee. He added that the agenda would entail reviewing the revised sections to determine if the SCJPC would adopt this as the official pole loading language. He further reported that some members have submitted their pole loading calculations. He stated that LADWP would be utilizing Osmose OCalc software. He checked his calculations versus those submitted by T-Mobile, both using the same software, and the results differed.

The members reviewed draft 6.6 Version 13 (see attachment). Ms. Hernandez commented that adding a note that the pole were set deeper is a great idea, however, she questioned if it requires an entire section. She added that the JPAs state when a pole is set deeper, and note the top grade of the pole. Mr. Walls agrees with Mr. Hernandez and asked for the member's thoughts on this. Since there is no response, Mr. Walls stated that this section could be omitted. Ms. Hernandez added that this

could be discussed in Routine about adding this issue to section 16 that when a pole is set deeper it must be noted on the JPA.

Mr. Wolfe commented on the minutes from the October 20th meeting. He requested that one word on page 2 be revised. The request was noted and the word replaced with that suggested by Mr. Wolfe.

The members then extensively reviewed and discussed section 6.7 and made minor changes in the verbiage of the three paragraphs (see attachment).

In section 6.7, third paragraph in parenthesis, Mr. Wolfe commented that he uses the term, "worst case scenario of the pole", in that the NESC and others reference heavy, light and medium loading areas situated across the nation. However, in California the power utilities do not recognize the heavy, medium and light loading areas in regards to equipment. He inquired if it is true that in California there is no medium loading. Mr. Peralta responded that this is not identified in California.

Mr. Walls stated that in fire areas, DWP would be calculating on 80 MPH winds.

Mr. Peralta reported that there is discussion in the OIR to accept the NESC extreme wind criteria. This allows you to reduce your safety factor by 1.33, which is equivalent to 97 MPH.

Mr. Wolfe stated that according to his recollection the threshold per hurricane force is 97 MPH.

The following paragraphs in this section address member interaction. There is one revision in the first paragraph, second sentence.

The members further discussed the remainder of section 6.7 and made revisions.

Section 6.9 and Item 19Q was extensively discussed. It was agreed that this be revised to better fit the SCJPC. This pertains to situations when more than one joint member performs calculations and any recalculating costs incurred by a member could be billed and/or shared as an authorized cost.

The members discussed the issue of members required to validate other member's calcs.

Mr. Walls questioned what would prevent a member from requesting that his organization validate a large volume of poles. Although the original intent is for those situations when calcs are questionable, but the language does not appear to prevent the requesting of validating a large volume of poles.

Ms. Hernandez stated that the initiating party must do their calcs, however, if they are unsure of the outcome, then they meet outside of the SCJPC and make a special agreement for the recalculations, and the costs are billed outside of the JPA process. She added that once the JPA

is initiated the other member(s) should not be required to validate the wind loading. However, if the receiving members deems it necessary to validate the calcs, then it is their option.

Mr. Peralta added that an issue might be the liability.

Mr. Wolfe responded that the intent was not to hold another party responsible, or to create greater volume of recalculations the intent is for a lesser amount of pole verification. He proposed rewriting the draft. The members responded that a re-write is not necessary, just some revisions.

The ad hoc committee then prepared to review pole loading diagram calculations provided by members. However, Mr. Walls stated that it would prove more conducive to their objective if the submitted pole calculation diagrams were reviewed at the JPC office with all members in physical attendance.

Mr. Wolfe inquired if the ad hoc members would be opposed to having members from the NCJPA attend the next ad hoc meeting. All members responded with no opposition.

There were no miscellaneous items.

Review of action items:

- Ad hoc members to review section 6.8 of draft version 13.
- Members to provide their pole load calculations.
- Mr. Walls to email OCALC to ad hoc members.
- Mr. Levy to email Draft version 13 with latest revisions to ad hoc members.

The meeting adjourned at 11:20 am, until November 17, 2009 at 9:30 am.

Jennie Corella - Manager of Operations

Draft Version 13

POLE AND ANCHOR LOADING

6.0 Scope

Construction and maintenance of poles, anchors, guys and other attachments under the NCJPA Routine shall at all times conform to the laws of the State of California, Order of the Public Utilities Commission (GO 95) and rules and regulations of other legally authorized bodies having jurisdiction, in so far as any or all of the foregoing may be applicable. Members initiating construction on jointly owned poles are responsible for performing total pole loading as described in GO95, rule 91.2 to ensure poles meet the applicable minimum safety factor.

6.1 Elements of Pole Loading

- Loading District (Light, or Heavy Load District)
    - (See GO 95, Rule 43.1 & 43.2 and Appendix A)
    - Special Loading Districts (High Winds/Fire Area)
- Construction Grade (A-B-C-F) (See GO 95, Rule 42)
- Stability of the soil (Firm Soil, Rock, swamp, etc.) If a pole is to be set in *soft* ground, use short spans and/or increased setting depths to avoid overturning due to wind loading. Under such conditions, unduly short spans or deep settings may often be avoided by rocking-in or keying of poles by use of mud sills or possibly by storm guys. Rocking-in, keying of a pole or installing of mud sills are considered for mutual benefit in all circumstances and shall be a shared expense.
- Pole Height
- Pole Brand above ground to determine actual setting depth and class
    - Poles 20’ to 50' in length, the brand is 10' from pole butt
    - After 1964 poles 55' and longer, the brand is 14' from pole butt
    - Poles 80' and longer 1955-1964, the brand is 15' from pole butt
    - 10' wood stubs, the brand is 9.5' from pole butt
- Date pole set (see date nail on pole or refer to pole record info)
- Angle/pull on poles (horizontal loads).
- Pole Class or pole circumference (diameter X 3.14 = circumference)
- Pole condition (i.e., shell rot, woodpecker holes, split top, large cracks, etc.)
- Shell Thickness (by bore test or removal of existing plug and use of a shell gauge. Poles identified as having decay may have tags affixed describing deterioration).
- Setting Depth (must meet or exceed the capability of the proposed load. New pole installations should be at a depth sufficient to meet the ultimate load capability of the pole. The ultimate bending moment should not exceed the ultimate overturning moment).
- Equipment weights (column loads)
- Height of Attachment (HOA) of all existing and proposed attachments
- Wire and cable types and sizes (diameters for all attachments)
- Span Lengths
- Anchor lead length and direction
- Guy strain (wire size and type)
- Mid Span separation due to Sag Differential (See GO 95, Appendix C)
- Clearance at 130 Fahrenheit temperature for final sag

- Calculated safety factor with calculated load for all attachments

6.2 Pole Loading Definitions / Types of Pole Loading

- Bending Moment / Overturning Moments – Poles should to be classed for bending moment as a pole must resist the wind loading by itself without the aid of supporting conductors or guys. The allowable overturning moment on a pole relates to the holding strength at ground line and the poles may be set to a depth that meets but does not exceed the ultimate loading of the pole class. The acronym to describe bending moment is “BM”

- Vertical Loading – Vertical load is the sum of all the weight on a pole, including conductors, cables, ice, equipment, and the column loading component from guying. The acronym to describe vertical loading is “VL”

- Equally Restrained Pole – 4-way tangent pole with equal type and sized cables and conductors, and in similar span lengths. Example: intersection pole; equal loading (zero-sum) in each direction, which cancels each other.
    - Vertical pole loading and Bending/Overturning moment loading is not required when poles are equally restrained as described above.

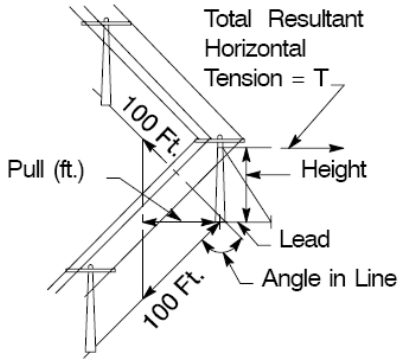
- Effectively Restrained Pole – 2-way (or more) dead-end pole with either unequal type and sized cables and conductors, or in dissimilar span lengths. Example: double dead end in two directions 90 degrees to each other with down guys in each direction; could be with different size conductors or cables in different directions. Slack spans are not an effective restraint

    - Vertical pole loading required

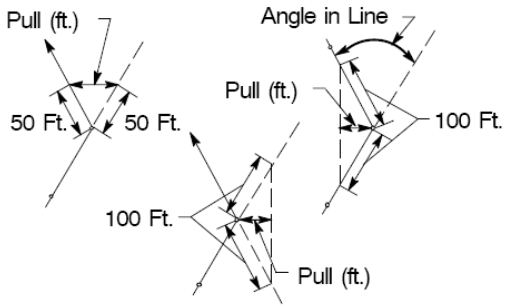
- Corner (double dead end) Pole
    - Vertical pole loading required

- Angle / Pull Pole – Pole set where conductors and/or cables have a change in direction creating an angle.

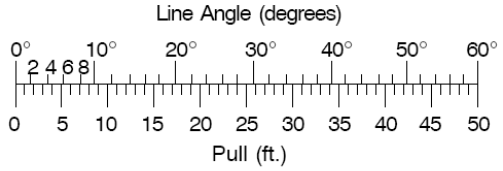
    - Vertical pole loading and Bending Moment/Overturning Moments are required; if either calculation fails, poles should be designed for the worst case scenario.



Example Illustration



Methods of Determining Pull



Scale for Changing Line Angles in Degrees to "Pull"

- Dead End Pole – Where conductors and/or cables terminate in any given direction on the pole
    - Vertical pole loading and Bending Moment/Overturning Moment Loading required

- Tangent Pole – When conductors and/or cables are running in a straight line configuration and the line has three degree's of angle or less and the pole is not guyed
    - Bending Moment/Overturning Moment Loading required

Note: Slack Spans - When un-guyed taps such as services or slack spans exist, consider the moment created by these attachments. Estimate the tension per attachment and multiply by the height of the attachment to obtain the moment. Attachments in the opposite direction of the maximum moment reduce the moment (i.e., services in opposite directions cancel each other). Note: slack cables or conductors are usually installed at less than 75 pounds tension.

6.3 Characteristics of an Overloaded Pole

Characteristics that might indicate potential for overloading:

- Pole: deformed, bowed, bending, severe cracking, deteriorated
- Guys/anchors: Significant imbalance in guy/anchor loading, evidenced by loose guys in conjunction with extremely taut guys; anchors pulled out of ground
- Conductors: numerous large conductors/cables, significant differences in the length of spans between adjacent poles, improper sag or tension
- Extraordinarily complex loading systems that appear to have evolved as a "layering" of incremental changes – without analysis of integrated loading

6.4 Pole Safety Factors (SF) - Grade A Construction - Joint Poles with Power and C Class

Refer to GO 95 rule 42 for more information.

- Min. of 4.0 SF for new joint pole sets with electric and C Class facilities
- Min. of 4.0 SF for electric transmission poles with C Class facilities (new sets and for existing poles)
- Min. of 2.67 SF for existing jointly owned poles with distribution power and class communication facilities

6.5 Pole Inspection - Shell thickness / Deterioration impacts to pole loading *(approved by committee 8/4/09)*

Some poles have tags affixed to them identifying deterioration of the pole below or above ground. When such tags exist, the Initiating Member may request a Receiving Member to provide pole test data to incorporate in their pole loading calculations. In cases where sufficient pole test data is not available, Members can agree to acceptable compensation to collect the data; Section 1.2 special agreement or use of billing items 19L 1-5, which ever is appropriate.

The chart (Figure 1) outlines what percentage of a poles maximum loading allowance would be reduced by based on remaining shell thickness.

Note: Many Members install tags on the poles which provide information regarding reduced shell thickness below ground or wood damage above ground. Some tags indicate a pole is being considered for pole reinforcement or for pole replacement. Contact the applicable joint owner(s) for the proper tag interpretation.
Note: Some Members have posted pole tagging information on www.ncjpa.org.

The following chart provides guidance on how to take remaining shell thickness data and establish what percentage of the pole strength remains.

Pole Strength Example

Example:

Testing a pole with a 30-inch circumference at the groundline. Internal decay is found in the center of the pole. The shell-thickness gauge measures an existing average shell thickness of 2 inches.

1. Place one end of a ruler at the 30-inch increment of the pole circumference scale.
2. Place the opposite end of the ruler at the 2-inch increment of the shell-thickness scale.
3. The percent of the original pole strength can now be determined. The pole strength is 88% of the new or original pole strength.

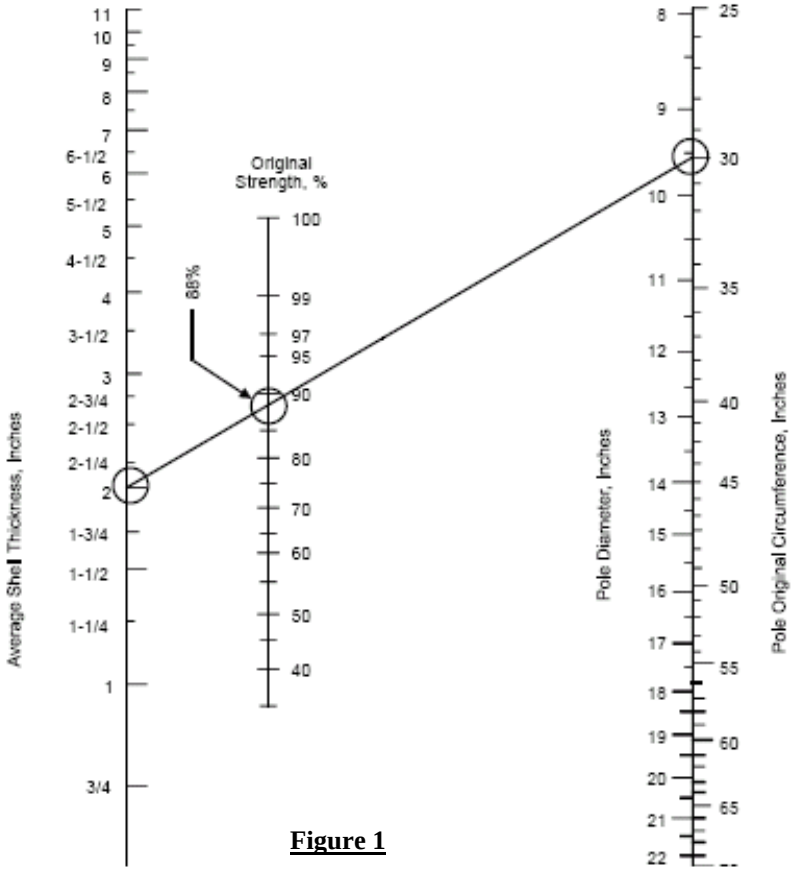


Figure 1

Note: For pole circumferences greater than 70" (i.e., generally cedar poles larger than 80 feet, Class H3) apply the formula below to determine the percentage of original strength.

% original strength = 1 – [1-(shell thickness / pole diameter) x 2]

6.6 Pole Setting Depth – Setting Poles Deeper

Setting a pole deeper than what is described in the "Grade and Space Chart by Pole Height" in Section 16 can establish a higher pole loading maximum allowance, which will accommodate future construction, and is considered mutually beneficial.

When poles are set deeper, the increased setting depth (in feet) shall be noted on the Form 2 within the "Location and Nature of Work" utilizing Section 6.6. The increased setting depth adds to the common area and reduces the usable space divided among owners for their exclusive use.

Note: The overall pole height above ground would be less than depicted in the "Grade and Space Chart by Pole Height" on page 16-2. Example: A 45' pole set 2' deeper requires the top of pole be depicted on the Form 2 as 37', not 39'. The usable space would be 13', not 15' and the common area would be 32' not 30'.

If a pole is to be set in soft ground, it is recommended to decrease span lengths and/or increase setting depths to decrease overturning moment due to wind loading.

6.7 Pole Loading Collaboration Between Members

Any ~~Initiating~~ Member planning to perform work on a pole, is responsible for gathering all pole/anchor data necessary to perform total pole loading (when pole loading is required). When the type of facilities in the field cannot be readily identified, the Initiating Member shall contact applicable pole owners to request facility information/maps (wire sizes, equipment sizes) from Members (prior to submitting a Form 2) to aid in completing total pole loading calculations prior to construction. (Refer to GO 95 Rule 44.2)

A Member requesting facility information from another Member(s) shall not construct until all facility information has been identified from all parties and total pole loading calculations have been completed with confirmation that the safety factor meets GO 95 minimum requirements. See Section 6.4.

The constructing ~~An Initiating~~ Member is responsible to address and reconcile any pole loading issues identified by a Receiving Member (related to their project) regardless of the status of the Form 2. In cases where Members disagree with each others loading calculations, Engineering representatives shall work together to verify the data used (facility information, spans, HOA, etc) and shall work together (taking into consideration the worst case scenario of the pole) to establish a final calculation.

Members have the following options in how they approach or submit information to other Members:

<u>Primary Method – Before Sending a member a Form 2 Package</u>

- A Member in the pre-planning stage of a project (before a Preliminary Form 2 is submitted to Members) may approach any Member to request facility information (when facilities in the field cannot be readily identified). The Receiving Member may ~~shall~~ be compensated for their actual costs; billed under a separate invoice and not through the SCJPC ~~NCJPA~~ office.

<u>After Sending a Member a Form 2 Package (Receiving Member is not requesting loading verification)</u>

- If a Receiving Member performs a calculation on their own for comparison purposes and that calculation differs from the Initiating Members calculation, and a pole's safety factor still passes, no compensation shall be provided to that Receiving Member.

- The Receiving Member performs a calculation on their own for comparison purposes and finds that a location's calculation is incorrect and actually prompts pole replacement/reinforcement, the Receiving Member shall be compensated for the recalculation ~~correction~~, per Authorized Cost Item 19Q(1).

Sending a Member a Form 2 Package (Receiving Member is requesting loading verification)

When an Initiating Member has interest in requesting a Receiving Member validate total pole loading calculations, they shall add Item 19Q(1) to the Form 2 (related to the applicable location). The Initiating Member shall provide to the Receiving Member:

- Total pole loading sheets with existing pole information, size and class, spans, heights of attachments, known facility descriptions
- proposed facility information
- pictures or pole tagging information, if available

The Receiving Member (requested to validate loading) may ~~shall~~ use their pole loading program to calculate total pole loading. The Receiving Members calculations (loading sheets) may ~~shall~~ be sent back to the Initiating Member for further review with the Form 2 response. See Glossary Definition for Pole/Anchor Loading Validation - Item 19Q(1).

When requested by an Initiating Member, pole loading reviews or performing calculations by a Receiving Member for the benefit of a Tenant is fully reimbursable per Section 17; See Non-Owner Cost Item 900.

6.8 Documentation of Total Pole Loading (Pole Loading)

Initiating Members shall include total pole loading data and existing safety factor on the Joint Pole Authorization **Form 2 Final** for the following section numbers:

- Section 3.1, 4.0, 4.1, 4.3, 4.4
- All of Section 7
- Sections 9.1, 10.5, 10.6, 10.8B

The format of depicting total pole loading on the Form 2 shall be as followed:

- For Bending Moment
  - OU1=BM xxxxx OU2=BM xxxxx TN = BM xxxxx SF = 3.69
- For Vertical Loading:
  - OU1=VL xxxxx OU2=VL xxxxx TN = VL xxxxx SF = 5.78

Note: “TN” is the acronym for a “Tenant”. Substitute OU 1, OU2, etc. with the applicable utility codes involved.
Refer to Section 20. “OU” would be replaced with the involved joint pole owner’s utility code; on the Form 2.

Note: The retention of each owners load and the calculated remaining Safety Factor on the Form 2 Final is intended to provide a snapshot in time of a pole(s) condition at that time under the finalized circumstances and is only intended to be a reference point for future consideration. New

construction on the same pole(s) at a later date will initiate a re-evaluation of the pole per GO 95 Rule 44.2 & 44.3.

6.9 Anchor Loading (Reserved for future use)

The below information would be removed from Section 6; include in the Glossary

Glossary Definition

Pole/Anchor Loading Validation - Item 19Q (1)
The item is intended to be used when recalculating and/or correcting pole loading submissions and is based on ½ hour of engineering labor per pole or anchor. The Receiving Member shall provide pole loading sheets with their Form 2 reply.

Southern California Joint Pole Committee
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November 17, 2009

A meeting of the **Pole-Loading ad hoc Committee** took place on the above date, at 9:00 a.m., at the Committee office. Those in attendance were:

Mr. Robert Wolfe	AT&T California (teleconference)
Ms. Lynn Prescott	Verizon Wireless
Mr. Scott Hunter	City of Los Angeles
Mr. Justin Cashmer	Verizon California (teleconference)
Ms. Annetta Baker	City of Colton (teleconference)
Mr. Juan Maldonado	CES (teleconference)
Mr. Brian Flynn	Southern California Edison
Mr. Art Peralta	Southern California Edison
Ms. Lupe Hernandez	AT&T Local Serv/ATT Comm.
Mr. Steve Rodriguez	T-Mobile USA (teleconference)
Ms. Paula Haney	NextG Networks (teleconference)
Mr. Kyle Levy	Committee Staff

Mr. Wolfe opened the meeting at 9:00 am and allowed for introductions.

The members reviewed the Osmose O-Calc analysis report scenario submitted by the City of Los Angeles. Mr. Peralta shared the results from the load calculations he performed using the data from the analysis report and stated that he arrived at a safety factor of 5.15. He added that he ran the data on his calculations software and arrived at a safety factor of 5.0.

Mr. Wolfe stated that the results are fairly close, which appear not to have a great impact on a pole failing.

Mr. Peralta responded that his software could be reading some wire diameter differently.

Mr. Peralta stated that in speaking with the owners of Osmose, they are working on their software to produce the safety factor on the report.

Mr. Wolfe added that he also is aware that the safety factor would be published on the full summary of the loading analysis report. This revision is currently being added to the software application.

Mr. Wolfe reported on the audit he participated in the day prior. He stated that the auditor was impressed at how well the engineer and the software operated in calculating the pole loading analysis. He added

when the software is operated, as it should perform, the results could be very satisfactory.

Mr. Maldonado had questions on the data for setting depth, strength factor. Mr. Wolfe and Mr. Peralta answered his questions, and explained the purpose of the data.

Mr. Peralta stated that the objective is to determine if the species and class of pole has enough of a safety factor to carry that load. He added that GO 95 is a guideline to construct and does not state how to pole load a calculation. The members discussed scenarios and answered Mr. Maldonado's questions, and concerns.

The members reviewed and discussed calculations submitted by DWP and AT&T. `

Mr. Wolfe reported that section 6 was adopted as written by the NCJPA.

Mr. Peralta proposed adding verbiage to section 6.8 under bullet "For Vertical Loading". The following bullet has been added, *" For Guy Adequacy: = GW1= VL xxxxx GW2=VL xxxxx TN=VLxxxxx SF = 2.00.*

It was agreed to add a fourth bullet to section 6.8 in the first paragraph. The paragraph shall include all of section 12.

When questioned where the pole load data is to be recorded and maintained, Mr. Wolfe responded that it was agreed by the NCJPA to record the data on the Final Form 2. When the loading data is recorded on the Form 2 final, then it is known that the data is loading data at the time of the Form 2 prepared by the personnel who did the pole loading calcs for the Form 2. He added that the pole load information is a snapshot in time at that time and could be utilized for audited purposes. He added that since the NCJPA does not have a pole record database such as the SCJPC, he recommends the pole loading data should be maintained on the pole record database of the SCJPC. This would make the data easily accessible to the commission in the event of an audit, proving to the commission that the committee is committed to the safety of the poles.

Ms. Prescott proposed sending the latest revised copy of section 6 to members for review at their leisure. She added that in her opinion more discussion is required to determine if the safety factor should be noted on a JPA or not. She added that she is not certain she would support the safety factor data on a final Form 2, since that information is required prior to initiating a form 2. She inquired if the data noted on the JPA would suffice for SCE, or would SCE require the actual calculation report. She concluded stating that these issues have not been determined and agreed upon.

Mr. Peralta responded that he would like to see the result, or at times both results and report.

Ms. Prescott stated that the data should be on the preliminary JPA.

Mr. Peralta stated that periodically, SCE would re-calculate the pole loading information to determine if SCE arrives at the same result as what is noted on the preliminary JPA.

Mr. Wolfe stated that the NCJPA has agreed to exchange pole-loading calculations amongst themselves. The calculations would accompany the JPAs.

Ms. Hernandez stated that she agrees with Ms. Prescott in that the issue of placing loading information on the JPA and on the pole records requires further extensive discussion. She added that she supports the method the NCJPA is adopting of exchanging their loading information amongst one another. She added with this method of exchanging information, what is the need of listing the info on the JPA?

Mr. Wolfe responded that he would agree with whatever the ad hoc agrees is the best method of exchanging information.

The consensus is that the ad hoc members would review the entire section 6, and bring any proposed revisions back to the next meeting for discussion.

There were no miscellaneous items.

Review of action items:

- Ad hoc members to review section 6.8.

The meeting adjourned at 11:00 am, until December 2009.

Jennie Corella - Manager of Operations

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December 3, 2009

A meeting of the **Pole-Loading ad hoc Committee** took place on the above date, at 9:30 a.m., at the Committee office. Those in attendance were:

Mr. Robert Wolfe	AT&T California (teleconference)
Ms. Lynn Prescott	Verizon Wireless (teleconference)
Mr. Steve Rodriguez	T-Mobile USA (teleconference)
Mr. Justin Cashmer	Verizon California (teleconference)
Ms. Paula Haney	NextG Networks (teleconference)
Mr. Joe Orona	City of Anaheim (teleconference)
Ms. Paula Haney	NextG Networks (teleconference)
Mr. Larry Chow	So California Edison (teleconference)
Mr. Brian Flynn	So California Edison (teleconference)
Mr. Art Peralta	So California Edison (teleconference)
Mr. Jim Eastwood	So California Edison (teleconference)
Mr. Dennis Walls	City of Los Angeles
Ms. Lupe Hernandez	AT&T Local Serv/ATT Comm.
Mr. Cory Autrey	Sprint-Nextel
Ms. Jean Baccus	Committee Staff
Mr. Kyle Levy	Committee Staff

Mr. Walls opened the meeting at 9:33 am and allowed for introductions.

Ms. Hernandez reported that she has suggested some revisions to section 6 for review by the ad hoc members.

Mr. Wolfe reported that phase two of the OIR is now in progress and information and suggestions are being exchanged in regards to loading elements.

The ad hoc proceeded to review the suggested revisions provided by Ms. Hernandez. The revisions are primarily for section 6.1.

Mr. Autrey inquired if section 6, as it is written in the latest format, has been approved by the NCJPA. Mr. Wolfe responded that there are some outstanding proxy votes that have yet to be submitted and tallied.

The members then reviewed the changes to section 6.7. Mr. Chow questioned the first sentence of section 6.7 in that it is not consistent with the OIR. Mr. Wolfe responded that it was written prior to the OIR decision. It was agreed to view the OIR.

Mr. Autrey questioned the issue of a five to ten percent load increase over a 12-month period per the OIR. He further questioned as to how one would determine the percentage of increase.

Mr. Peralta responded that a pole load calculation is most likely necessary. He added that the 5-10 percent increase is not a standard at this time in the phase one of the OIR; however, the commission would prefer the 5-10 percentage. He further added in speaking with Mr. Stonerock, who is the SCE GO 95 representative, the percentage is still under discussion and discussion would continue into phase two of the OIR.

The members then reviewed and discussed the OIR decision page 40, Rule 44.2 Additional Construction.

Mr. Walls inquired if Mr. Chow has an issue with section 6.7 not in consistency with Rule 44.2.

Mr. Chow responded that he has concerns with the section being consistent with what the order is going to say. He added that the section might require revision when the proceeding is officially over.

Mr. Walls stated that he is clear that members are to provide pole load information to one another within a specific timeframe.

Mr. Chow responded that this might be a training issue. He added that he is fine with the language if all members are in agreement with the interpretation of the language and perhaps document a clear and concise interpretation for future reference.

Mr. Walls stated that referring to the first or second ad hoc meeting, there was some discussion that these issues fall outside of the SCJPC, and would be spelled out in the General Order. Therefore, he questioned if it is necessary to document this in the Routine when it is already documented in the General Order. In regards to Item 19Q there is a current process in place at DWP that members are able to acquire information for a fee when necessary.

Mr. Wolfe responded that the NCJPA started work on section 6 prior to the OIR starting their work, and the idea was to formulate an alignment of thinking among members that have been working together for a number of years. Item 19Q is a way for members to provide information amongst one another and compensating one another for the work done. He added that there are many issues documented in GO 95, but it does not spell out how the members should communicate and interact with one another.

Ms. Hernandez stated that she understands that the committee should align it self with what is in the OIR; however, she added that she agrees with Mr. Walls in that this should not be a part of the Routine. She further added that parts of this issue could be implemented in the Routine. The Routine does have some references to GO 95 however; there are no standards and/or compliance issues pertaining to GO 95.

Mr. Peralta stated that of section 6, he is of the opinion that section 6.7 and 6.8 should be included in the Routine since it pertains to

pole loading data. He added that some remaining sections could be part of an appendix.

Ms. Hernandez stated for clarification that the safety factor would always be noted, and a tangent pole would have the bending moment. If there were a down guy, the notations would be safety factor, bending moment and vertical loading. Mr. Peralta stated that there could be a footnote stating the above-required pole loading notations.

The members extensively discussed the information to be documented, information not necessary, and where to document necessary data.

Mr. Walls stated that he supports providing the loading calculation sheets when submitting a form 2. However, he feels noting the safety factor is unnecessary.

Ms. Prescott interjected stating that a necessary discussion for the ad hoc committee is how are members to communicate amongst one another the required calculation sheets data. She added if the form 2 is for one pole, attaching the calc sheets poses no issue. However, her organization processes multiple poles per JPA, and to send calc sheets for all poles to all members in her opinion is overkill. She added that some good methods for sharing this information could be via email, and/or a PDF file.

Ms. Haney stated that if the safety factor is noted on the pole card, there is the possibility that five years later a member might accept the safety factor and gain a false notion that the pole is safe. She added that unless the safety factor is continually kept up to date. The old information would be of no use.

Mr. Chow stated that he is in agreement with Ms. Haney. If the safety factor is to be maintained on the pole record it must be kept current. If a member does work on their space and there is no need to initiate a JPA, than that safety factor new becomes an untrue statement. He added that this information could be recorded on the prelim, but does not necessarily need be noted on the final form 2. He added that the ad hoc should determine at the minimum what specific information, such as bending moment, safety factor and vertical load, should be noted and leave it up to the individual member how they choose to communicate that information to joint members, whether it be on the form 2, or attach the pole calculation report, or a spreadsheet.

Mr. Walls proposed taking a vote from the members of those in favor of placing the pole loading information on the form 2 and those members that oppose the information on the form 2.

Mr. Wolfe created the proposals for vote by the ad hoc members. The proposal is, "the show of interest in 6.8 to 1) follow the format in the North inclusion of raw data on the final form 2, or 2) modify format for the Southern process lacking inclusion of raw data and retention on JPA loading sheet analysis to be included in form 2 preliminary". Mr. Wolfe

stated in his opinion, section 6.8 would require revision to format to the SCJPC process.

A tally was taken of the members which proposal they preferred, Option 1 or Option 2. The results are as follows:

Option 1	*Option 2*
	Lupe Hernandez
Zero	Dennis Walls
	Cory Autrey
	Paula Haney
	Larry Chow
	Joe Orona
	Lynn Prescott
	Justin Cashmer
	Steve Rodriguez
	Robert Wolfe

Mr. Wolfe stated that the ad hoc would require editing 6.8 to conform to the SCJPC. Which excludes information on prelim and final form 2. However, loading sheets would be exchanged amongst members. Next step is to determine if any loading information should be recorded on pole records.

Those members that DO NOT favor loading information on the pole records are as follows:

Justin Cashmer
Paula Haney
Larry Chow
Cory Autrey
Lynn Prescott
Steve Rodriguez
Joe Orona
Lupe Hernandez
Dennis Walls

AT&T California is in favor of loading information on pole records.

The consensus is that AT&T Local Services, and Sprint-Nextel would work on revising section 6.8 to better fit the SCJPC. Mr. Chow stated that he would contact Ms. Hernandez in regards to this section and replacements.

Ms. Haney questioned when this would become effective. Mr. Wolfe responded when the revisions are complete and approved.

Ms. Prescott inquired if Ms. Hernandez would work on the entire section 6, or only rework section 6.8.

Ms. Hernandez responded that she would like to share with the ad hoc the revisions she has made to several parts of the entire section.

Mr. Autrey stated that the ad hoc should determine and agree just what pole loading is and how it is calculated and should it become a part of the Routine Handbook or have it published on the web as an FYI. He inquired if the ad hoc should take a vote on pole loading becoming a part of the Routine Handbook, or an FYI on the website.

Mr. Walls stated that he would prefer the information on a page on the website just as the Basic JPA Training module resides on the website rather than a part of the Routine Handbook.

Mr. Autrey stated that he is in agreement with Mr. Walls.

It was agreed to tally who would prefer to pole loading direction in the Routine Handbook, or as an FYI on the website. The voting options are as follows:

1. Section 6 in Routine Handbook
2. Pole loading directions on a special page on the SCJPC.net website.
3. As an appendix to the Routine Handbook
4. Take portions of section 6 that are valid and relevant to the SCJPC and implement into the Routine Handbook.

The vote tally would take place at the next meeting.

There were no miscellaneous items.

Review of action items:

- Ms Hernandez and Mr. Autrey review and revise Section 6 in its entirety and bring revised draft to the next meeting.

The meeting adjourned at 11:50 am, until January 2010 when Ms. Hernandez is ready with section 6 revisions.

Jennie Corella - Manager of Operations