

**GENERAL SESSION MINUTES
TRANSMISSION MAINTENANCE COORDINATION COMMITTEE
April 15, 2010
ISO Headquarters
Folsom, California**

Stephen Rutty, Chairperson of the Transmission Maintenance Coordination Committee (TMCC), called the meeting to order.

ATTENDANCE

The following TMCC members were in attendance:

James Alligan (Trans Bay Cable, LLC (TBC))
Jesse Ante (California Public Utilities Commission (CPUC))
Charles Cooper (Western Area Power Administration (WAPA))
Raj Beasla (Pacific Gas & Electric (PG&E))
Tibor Foki (International Brotherhood of Electrical Workers Local Union 47 (IBEW 47))
David Haerle (Los Angeles Department of Water & Power (LADWP))
Frank Johnson (San Diego Gas & Electric (SDG&E))
Landis Marttila (IBEW 1245)
Mike Palusso (Southern California Edison (SCE))
Jamie Patterson (California Energy Commission (CEC))
Stephen Rutty (California Independent System Operator Corporation (ISO)) – Chairperson
Jorge Somoano (City of Burbank Water & Power(BWP))

The following TMCC members were not in attendance:

Steve Mendoza (Western Wind Energy)

The following members of the public were in attendance:

Louis Fonte (ISO)
David Hahn (WAPA)
Tom Halford (ISO)
Steven Narolski (Bonneville Power Administration (BPA))
Mike Wuethrich (SCE)

GENERAL SESSION

The following agenda items were addressed:

Public Comment

No comments provided.

Decision on 1/21/10 General Session Minutes

IBEW 1245 Business Representative, Landis Marttila, moved for approval of the January 21, 2010 TMCC general session minutes, as modified. WAPA Sierra Nevada Region Maintenance Manager, Chuck Cooper, seconded the motion and the minutes were approved, 11-0-0.

TMCC Membership Renewals, Replacements, and Additions

TMCC Chairperson, Stephen Rutty, informed the TMCC that seven members were recently approved by the ISO Board of Governors to fill seven two-year voting memberships beginning April 1, 2010 which brought the TMCC voting membership to twelve. Mr. Rutty relayed the Board's appreciation for the great effort the TMCC provided to help assure safe and reliable service from the grid. The seven members were introduced at the meeting and are:

Voting Member	Job Title	Organization
James Alligan	Director of Compliance	TBC
Raj Beasla	Substation Maintenance and Construction Director	PG&E
Chuck Cooper	Sierra Nevada Region Maintenance Manager	WAPA
Frank Johnson	Substation Construction and Maintenance Manager	SDG&E
Tibor Foki	Business Representative	IBEW 47
Jorge Somoano	Assistant General Manager	BWP
David Haerle	Superintendent of Electrical Station Maintenance Support Services	LADWP

TBC Director of Compliance, Mr. Alligan, briefed the Committee on a 400MW project inclusive of a 53 mile underwater direct current cable and converter stations at Potrero and Pittsburg. This facility is currently not yet under ISO operational control but would be subject to the *ISO Transmission Maintenance Standards* after TBC turns control over to the ISO within a year.

CPUC Staff proposed General Order for Substation Inspection

SCE Manager of Transmission/Substation Maintenance and Inspection, Michael Palusso, and LADWP Superintendent of Electrical Station Maintenance Support Services, David Haerle, provided the current status on the development of the *General Order for Substation Inspection*. They indicated the California Consumer Protection and Safety Division (CPSD) recently requested letters from the organizations attending the previous workshops confirming agreement with the language crafted in the 11/13/2009 draft *General Order for Substation Inspection*. In a parallel effort the CPSD contacted utilities that didn't participate in the workshops to get their consensus on the same document. CPUC Utilities Engineer, Jesse Ante, indicated it could be another year before this work would come to a conclusion.

CPUC Proposed Rule Changes for Rulemaking R.08-11-005 on Fire Safety Hazards

ISO Transmission Asset Engineer, Tom Halford, and IBEW 1245 Business Representative, Landis Marttila, led the discussion on proposed rule changes regarding the CPSD's activity on facilitating Phase 2 of a rulemaking effort to reduce fire safety hazards in California. Mr. Marttila and Mr. Halford focused on the proposed rule changes to existing *State of California General Order 165* that was made effective in 1998 to only cover inspection and subsequent corrective action on electric distribution facilities under the jurisdiction of the CPUC. They participated in a workshop held on April 7-8, 2010 at CPUC headquarters in San Francisco that addressed and voted on a proposed rule change to General Order 165. This rule change requires utilities to prepare and follow their inspection/maintenance procedures on transmission facilities and allows the CPUC to review and have access to all inspection/maintenance records and transmission maintenance practices of owners having transmission facilities under the CPUC jurisdiction. Consensus was reached on the following primary language added to General Order 165:

“IV. Transmission Facilities

Each utility shall prepare and follow procedures for conducting inspections and maintenance activities for transmission lines.

Each utility shall maintain records of inspection and maintenance activities. Commission staff shall be permitted to inspect records and procedures consistent with Public Utilities Code Section 314 (a).”

Mr. Halford indicated additional workshops and a final report are scheduled for completion in July or August 2010 with an expected decision by the CPUC in November 2010.

Briefing on BPA Vegetation Management Best Practices

BPA Vegetation Management and Access Maintenance Program Manager, Steve Narolski, provided a presentation to the Committee of BPA’s study using five different methods to evaluate vegetation conditions in BPA transmission corridors. 38 side-by-side comparisons were performed over 325 circuits encompassing over 14,000 field data points. The comparisons evaluated for:

- ***Danger Brush*** (vertical or lateral growth $\leq 15'$ for $\geq 230\text{kV}$, $\leq 10'$ for $< 230\text{kV}$)
- ***Danger Tree Grow-In's*** (lateral growth $\leq 15'$ for $\geq 230\text{kV}$, $\leq 10'$ for $< 230\text{kV}$)
- ***High Brush*** (vertical growth, 16-25' for $\geq 230\text{kV}$, 11-20' for $< 230\text{kV}$)

The following table lists the study results by order of most accurate sampling method and by most cost effective sampling method:

Most Accurate	Most Cost Effective
LiDAR(Light Detection And Ranging using aerial laser scanning survey)	Aerial surveys w/observer(TLM or NRS)
Private consultant ground survey	(NRS veg-only)
Transmission Line Maintenance (TLM) working patrols	TLM working patrols
Aerial surveys w/observer(TLM or Natural Resource Specialist(NRS))	Private consultant ground survey
Aerial surveys w/observer(TLM or NRS)	LiDAR

Recommendations that came out of the study were:

- Acquire new LiDAR data annually @ 20% rate.
- Phase in natural resource specialist ground inspections
- Create “iso-clearance line counter maps” of all NERC-sanctionable and BPA significant circuit rights-of-way corridors
- Trend reliance of aerial surveys and transmission line maintenance working patrols toward identifying imminent threats
- Phase in LiDAR as clearance verification

Briefing on California Air Resources Board proposed SF₆ regulation requirements

Mr. Haerle informed the Committee of the current status of the State Assembly Bill AB32 that mandates the California Air Resources Board (ARB) to develop regulations to achieve greenhouse gas emission reductions. A proposed regulation for reducing sulfur hexafluoride (SF₆) emissions from gas insulated switchgear (GIS) was adopted by the ARB at their February 25, 2010 meeting, subject to appropriate modifications by the ARB staff. The primary requirement in this version is for each calendar year specified below that the annual maximum emission rate for SF₆ gas for each GIS owner’s active GIS equipment shall not exceed:

Calendar Year	Maximum Allowable SF ₆ Emission Rate
2011	10%
2012	9%
2013	8%
2014	7%
2015	6%
2016	5%
2017	4%
2018	3%
2019	2%
2020, and each calendar year thereafter	1%

An enforcement issue that is being discussed and debated is whether 365 separate daily violations is appropriate for an exceedance that is only being tracked and reported once a year.

Another concern was that old GIS equipment with higher SF₆ capacity (500 lbs) replaced with new GIS equipment with lower SF₆ capacity (250 lbs) will tend to place the owners with higher storage inventories of SF₆ gas.

A modified version of this regulation to address some of these concerns has yet to be released for a 15-day public review and comment period and it is not known at this point what changes the ARB staff will agree to or what the final requirements will be. More status information and the detailed equation for allowable losses can be found at: <http://www.arb.ca.gov/cc/sf6elec/sf6elec.htm>

Recent Committee experiences with NERC reliability standards

Mr. Palusso noted there is an open comment period for the Federal Energy Regulatory Commission’s definition of “bulk electric system” as clarified in the Notice of Proposed Rulemaking (NOPR) (Docket No. RM09-18-000). This NOPR primarily defines bulk electric system equipment as any transmission facility that operates at or above 100kV. The bulk electric system definition will be used in the continued development of the NERC PRC-005-2 (*Protection System Maintenance and Testing*) standard. Further discussion on PRC-005-2 was scheduled via a conference held in Denver, Colorado on April 27-28, 2010 by the North American Transmission Forum. The current status of PRC-005-2 can be found at the following NERC website address:
http://www.nerc.com/filez/standards/Protection_System_Maintenance_Project_2007-17.html.

ISO, WECC, NERC, and CPUC overlapping maintenance standards

Mr. Halford led a discussion on what options may be available to reduce duplication of record reviews with regard to the *ISO Transmission Maintenance Standards*, Western Electricity Coordination Council, NERC, and CPUC maintenance standards. The PTO representatives at this meeting indicated they would be able to provide public but not some confidential reports issued to their organizations regarding the results of audits conducted by WECC, NERC, and CPUC. Mr. Ruty indicated the ISO would be willing to consider waiving portions of their annual reviews if the records provided by the PTOs satisfied the ISO records review

requirements. *ISO Transmission Maintenance Procedure No. 4* allows the PTOs to recommend acceptance of a request to use another review or for a waiver of the ISO annual maintenance review. The depth of any future acceptance by the ISO of other review records would set the precedent of what detail the records would need to be in order to satisfy the ISO records review requirements. Regardless of that precedent the ISO noted it would still conduct appropriate site reviews.

Major Grid Events

Mr. Haerle indicated the ± 500 kV DC Intertie from Celilo-Sylmar had a section of line fall down on March 9, 2010 and took out the adjacent 115kV Gorge line. One heavy suspension and 10 guy-supported suspension towers on the DC Intertie collapsed during sustained winds at high speeds with gusts that exceeded the tolerance of the towers. LADWP crews restored the 115kV Gorge line by March 15 and the DC Intertie line by April 1, 2010. Internal analysis of the root cause is ongoing.

SDG&E Substation Construction and Maintenance Manager, Frank Johnson, provided a presentation of the Imperial Valley substation damage caused by the 7.2 on the Richter scale earthquake near Mexicali, Mexico on April 4, 2010. The greatest portion of the damage was due to bus connector brittle fractures, arrester porcelain insulator breakage, and transformer porcelain bushing breakage. SDG&E indicated one 500kV transformer bank would be placed back in service in the later part of April 2010 and the other in the middle of May 2010.

Mr. Cooper provided a set of pictures displaying the amount of snow and ice buildup that occurred on WAPA's 500kV Captain Jack-Olinda transmission line where it crossed the top of a mountain range. The pictures indicated insulator strings that were entirely engulfed as well as the 18 inch gaps between conductors on a tri-bundle configuration that were almost bridged with snow and ice.

NEW GENERAL SESSION BUSINESS ISSUES AND FUTURE AGENDA ITEMS

General Session Business Issues

Future Agenda Items

1. Share recent audit experiences involving NERC *Reliability Standards* and compliance processing;
2. CPUC draft *General Order for Substation Inspection*;
3. Briefing on Proposed Rule Changes for fire safety hazards (R.08-11-005);
4. Briefing on California Air Resources Board proposed SF₆ regulation requiring location information and quantity from the utilities; and
5. Briefing on major grid events that occurred in September and October 2009.

The TMCC scheduled July 15, 2010 from 9:30 am to 2:00 pm for the next meeting at the ISO in Folsom.

ADJOURN

Mr. Marttila moved to adjourn the meeting and Mr. Cooper seconded the motion.

TMCC MEMBER GENERAL SESSION ACTION ITEMS

1. Appropriate Committee member organizations to stay involved with development of the *General Order for Substation Inspection*;
2. Appropriate Committee member organizations to stay involved with the development of proposed rule changes on fire safety hazards (R.08-11-005);
3. ISO will post the minutes approved for the January 21, 2010 meeting on the ISO website; and
4. PG&E will discuss the results of the 500kV Moss Landing-Los Banos and Tracy-Los Banos conductor hardware failure investigations at the July 15, 2010 TMCC meeting.