1. Attendance and Introductions

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charles Rogers</td>
<td>RFC</td>
<td>Consumers – Chairman</td>
</tr>
<tr>
<td>Hank Miller</td>
<td>RFC</td>
<td>AEP</td>
</tr>
<tr>
<td>Eric Udren</td>
<td>KEMA T&amp;D Consulting</td>
<td></td>
</tr>
<tr>
<td>Phil Tatro</td>
<td>NPCC</td>
<td>National Grid</td>
</tr>
<tr>
<td>Joe Burdis</td>
<td>RFC</td>
<td>PJM</td>
</tr>
<tr>
<td>Phil Winston</td>
<td>SERC</td>
<td>Southern Company</td>
</tr>
<tr>
<td>Baj Agrawal</td>
<td>APS</td>
<td></td>
</tr>
<tr>
<td>Deven Bhan</td>
<td>MRO</td>
<td>WAPA</td>
</tr>
<tr>
<td>Dean Sikes</td>
<td>SPP</td>
<td>CLECO</td>
</tr>
<tr>
<td>Joe Uchiyama</td>
<td>USBR</td>
<td></td>
</tr>
<tr>
<td>James Roberts</td>
<td>Federal</td>
<td>TVA</td>
</tr>
<tr>
<td>Bill Miller</td>
<td>ComEd</td>
<td></td>
</tr>
<tr>
<td>Jon Sykes</td>
<td>SRP</td>
<td></td>
</tr>
<tr>
<td>Mark Carpenter</td>
<td>ERCOT</td>
<td>TXU</td>
</tr>
<tr>
<td>John Ciufo</td>
<td>Canada</td>
<td>Hydro One</td>
</tr>
<tr>
<td>Bob Stuart</td>
<td>NERC Consultant</td>
<td></td>
</tr>
<tr>
<td>Tom Wiedman</td>
<td>NERC Consultant</td>
<td></td>
</tr>
<tr>
<td>Mike McDonald</td>
<td>Ameren</td>
<td></td>
</tr>
<tr>
<td>Jim Ingleson</td>
<td>NYISO</td>
<td></td>
</tr>
<tr>
<td>Bob Cummings</td>
<td>NERC Staff</td>
<td></td>
</tr>
</tbody>
</table>

2. Anti-Trust Guidelines

Bob Cummings reviewed the NERC Antitrust Guidelines, attached.

3. Review of Agenda

Charles Rogers reviewed the agenda with minor changes made.

4. Administrative Matters

a. Review and Approval of Meeting Minutes – As Available

No draft minutes were available for review at this meeting.

b. Overview of February 2007 NERC Board of Trustees Meeting

The NERC Board of Trustees met February 13, 2007 in Chandler, AZ, taking a number of actions and notable directions:

- The Protection System Review Program – Beyond Zone 3 EHV Report was forwarded to the Board of Trustees for their information as part of their consent agenda for their February 2007 meeting.
- The NERC Board of Trustees has formed a Technical Subcommittee of the Board, chaired by Jim Goodrich.
- Gerry Cauley has left NERC to become the President of SERC, and Gerry Adamski has replaced him as Director of Standards. David Whitely, formerly of Ameren, has been named Executive Vice President over the following NERC Programs: Reliability
NERC has established four corporate goals. The fourth goal states: “Identify and implement specific actions that will improve the long-term reliability of the bulk power system.” One of the initiatives within the Reliability Assessment and Performance Analysis Department is System Protection Performance Improvements. The work of SPCTF and the Event Analysis area, led by Bob Cummings, is directly related to that initiative.

c. NERC Staff Liaisons Named

- Bob Cummings has been named the official NERC staff liaison to the IEEE Power Engineering Society (PES) and the IEEE Power System Relay Committee (PSRC).
- John Seelke has been named liaison to CIGRE.
- Mark Lauby has been named liaison to the European Union for the Co-ordination of Transmission of Electricity (UCTE).
- A new Events Analysis Working Group (EAWG) will be formed to replace the Disturbance Analysis Working Group (DAWG) to support the Events Analysis program at NERC that Bob Cummings leads. Members of the SPCTF may be asked to serve as ad-hoc members for protection-related event analyses. Bob Cummings has reviewed the list of events analysis currently underway in his group. SPCTF will have brief reports at its meetings on those analyses.

d. Standards Under Review and Related SARS

- Standards Committee on UFLS Standards Review — Although SPCTF did not make official comments on the draft SAR, a brief review of the standards under consideration (PRC-006 through PRC-009) reveals that the maintenance portion should be broken out and included in an overall maintenance standard, and that other aspects of those standards are more appropriately planning standards (TPL). SPCTF will discuss these later in the agenda.
- The SPCTF tabled further discussion on the Redundancy SAR and related technical report, which were rejected at the December 2006 Planning Committee meeting, until the March SPCTF meeting.

5. System Event Reviews

- **British Columbia Disturbance – January 23, 2006** — On January 23, 2006, British Columbia Transmission Company experienced a disturbance. Initial reports are that a programmable logic control misbehaved while a technician was conducting testing, tripping all breakers in the Williston 500 kV switchyard. About 3,000 MW of generation was lost and about 1,000 MW of load was lost. WECC has requested an abbreviated report from BCTC on the event, which will be reviewed at the March WECC Compliance Monitoring and Operations Subcommittee (CMOPS) meeting. Bob Cummings and Bob Stuart will be reviewing.

- **European Disturbance – November 4, 2006** — Bob Cummings had forwarded a copy of the Union for the Co-ordination of Transmission of Electricity (UCTE) analysis of the European disturbance on November 4, 2006. The report highlighted that wind generators and other distributed generation
exacerbated an over-frequency situation in the northeast island when they automatically restarted after initially tripping during the disturbance. The result was an increase in frequency from 50.3 Hz to 50.4 Hz (on a 50 Hz system) in that island. Fortunately, the frequency level was insufficient to cause over-speed tripping of another generation in the island.

Relay loadability and protection system coordination problems were also experienced. One line that with a normal rating of 2,000 A tripped at 2,100 A, and one line had different settings at each end, with the operators not being aware of the difference. Bob Cummings reported that these will become “lessons learned” from the event.

- **Amtrak Electric Traction Power Outage – May 25, 2006** — Amtrak electric traction power supply suffered an interruption on May 25, 2006, on the Northeast Corridor between New York City and Washington, DC. NERC’s Event Analysis group directed a detailed analysis of the event to determine the root cause, which was the failure of a programmable logic controller (PLC) that artificially limited output of a frequency converter station. NERC made a number of recommendations in the areas of operating procedures, system protection, alarm processing, system dynamics, long-term planning, operational and short-term planning, communications, blackstart, staffing, training, and data recording.

The report is Protected Critical Infrastructure Information (PCII) as designated by the Department of Homeland Security (DHS) under the Critical Infrastructure Information Act of 2002 (CII Act) and 6 Code of Federal Regulations (CFR) Part 29 — PCII-070215-001570. Only the lessons learned can be released.

- Lessons Learned — Bob Cummings reported that NERC is finding a number of events where there is a loss of observability and control of a station during events. These are typically being caused by loss of AC supply to the RTU, transducers, or communications equipment, or surge damage to that equipment. NERC is urging transmission owners to improve the surge-withstand capability of the RTU and communications systems, and ensuring that RTUs, transducers, and associated communications systems are powered from station batteries.

### 6. Planning Table 1 and its Impacts on PRC Standards

A great deal of work is being done by various committees and working groups related to planning Table 1, which is used in a number of standards, and is currently referenced in the proposed redundancy standard.

- **Assess Transmission Future Needs and Develop Transmission Plans** drafting team is proposing revisions to the table, and is hoping to post revisions for comment in October 2007, ballot in February 2008.

- **The Operating Limits Definition Task Force (OLDTF)** is preparing a white paper on reliability concepts which addresses the tenets of Table 1 in three timeframes: planning, operations planning, and real-time operations. There will undoubtedly be some proposed changes to Table 1 as a result of that work. The white paper is proposed for completion and approval by the Operating and Planning Committees in June 2007. SPCTF will have opportunity to review and comment on the document. That work will be the subject of a workshop with examples at the March standing committees meetings.
7. Draft SAR – Protection System Redundancy

The Planning Committee rejected the draft SAR on protection system redundancy at their December 2006 meeting. The PC then charged the SPCTF with making some additional changes to the SAR and resubmitting it to the PC for their March meeting.

The SPCTF decided to postpone submittal of the revised redundancy SAR until the June 2007 Planning Committee meeting.

The SPCTF discussed the draft SAR and provided further guidance to the Redundancy team, to facilitate additional development prior to the April 2007 SPCTF meeting.

**Action Items:**

Phil Winston, Hank Miller, and Jon Sykes will revise the SAR and reference paper. They will bring the re-draft to the April 2007 SPCTF meeting.

Charles Rogers will seek additional PC guidance at their March meeting.

8. Review of Planning Committee Assignments

a. General Review of all PRC family of Reliability Standards (Recommendation 8C Assignment)

SPCTF discussed the procedure to be used for submitting SARs. The task force decided to utilize the generic SARs prepared by the Standards development process unless there are specific recommendations related to a PRC standard.

- **Protection System Maintenance**
  - PRC-005 – Transmission and Generation Protection System Maintenance and Testing
  - PRC-008 – Implementation and Documentation of Underfrequency Load Shedding Equipment Maintenance and Testing
  - PRC-011 – Undervoltage Load Shedding Maintenance and Testing
  - PRC-017 – Special Protection System Maintenance and Testing

SPCTF discussed the draft technical review of PRC-005 prepared by Phil Winston and Hank Miller. SPCTF decided to propose consolidation of all of the PRC relay maintenance standards (PRC-005, PRC-008, PRC-011, and PRC-017) into a single standard.

Hank Miller, Phil Winston, and Jon Sykes provided revision 2 of the technical review report, including all four standards for discussion. The report was finalized, and a Draft SAR was developed for presentation to the PC along with the report.

Eric Udren has prepared a second draft of the reference paper and forwarded it to the sub-team. Eric will send it to the SPCTF for review as soon as it is ready. The document should be available for discussion at the April 2007 SPCTF meeting.

- **UFLS**
  - PRC-006 – Development and Documentation of Regional Reliability Organizations’ Underfrequency Load Shedding Program
  - PRC-007 – Assuring Consistency of Entity Underfrequency Load Shedding Programs with Regional Reliability Organization’s Underfrequency Load Shedding Program Requirements
  - PRC-009 – Analysis and Documentation of Underfrequency Load Shedding Performance Following an Underfrequency Event
The technical review covering these three standards, prepared by Phil Tatro, was discussed and finalized. A request was made (by phone and e-mail) to the Planning Committee Chairman Scott Helyer, to allow SPCTF to submit our draft technical review report as comments on the posted UFLS SAR (the comments are due by March 9). He responded that he cannot provide that authorization on his own, and that he would forward the e-mail request to the PC Executive Committee. He doubted that they would authorize this without seeing (and discussing) the draft report. Bob Cummings has advised him that he’d send him the draft report as soon as available.

- **UVLS**

A number of other draft technical reviews have been assigned and are in various stages of completion.

PRC-010 - Technical Assessment of the Design and Effectiveness of Undervoltage Load Shedding Program. – Tom Wiedman assigned

Tom Wiedman provided a first-draft of the report for a discussion of this report.

**Action Item:**

Charles Rogers is to send the marked-up copy of Tom’s draft report to the SPCTF.

- **Special Protection Systems**

PRC-012 – Special Protection System Review Procedure

Bill Miller and J. D. Roberts provided the first draft of a report on PRC-012 in the form of markups within the standard. Bill led a discussion of his report, citing NPCC A-11 and MAAC A3 in his discussion. A copy of the A-11 was distributed with the agenda for the meeting. They are prepared to move forward on development of the report.

PRC-014 – Special Protection System Assessment

Bill Miller and J. D. Roberts provided a first draft of a report on PRC-014, in the form of markups within the standard. They are prepared to move forward on development of the report.

**b. Assignments from Blackout Recommendation Review Task Force (BRRTF)**

i. **TR-18 - Revise Industry Standards to Establish Under/Over Frequency Design Limits of Operation for Distance Relays**

Charles Henville’s February 27, 2007 letter was discussed. The IEEE PSRC WG D22 (chaired by Tom Wiedman) will meet for the first time in Nashville in May 2007. The SPCTF meeting follows the PSRC meeting at the same location; if SPCTF members are able to attend the PSRC D22 meeting, which would be advantageous. Note: This meeting is currently scheduled for Tuesday PM; Mike McDonald will attempt to reschedule it for late Wednesday AM. Jim Ingleson is responsible to distribute the PSRC Agenda; if this agenda change is made, Jim will send a notification to the SPCTF.

Baj Agrawal reported that PSERC (Power System Engineering Research Center) is conducting research in this area. Baj will send the URL to the SPCTF for the work being done, and forward any member-only information.
ii. TR-20 - Review and report on advantages and disadvantages of EHV auto-reclosing methods including High Speed Reclosing

Phil Tatro advised Charles Rogers by e-mail that he hadn’t had an opportunity to further develop this report. He promised an update prior to the San Antonio meeting in April 2007. Phil will not be able to attend the San Antonio meeting.

9. SPCTF Planning Calendar and Work Plan

The Executive Committee of the Planning Committee met on Feb 7-8 with subgroup chairs to develop a 3-year work plan. The results of that meeting, as related to the SPCTF, were discussed at length and incorporated into the SPCTF Planning Calendar. Charles Rogers had sent out a copy of the PC Work Plan prior to the meeting.

• 2007 Tasks with SPCTF Lead
  a. Events Analysis – Virtually every disturbance has protection ramifications. The NERC Event Analysis and Information Exchange (lead by Bob Cummings) will establish a new event analysis working group. SPCTF members may be asked to serve on analysis teams as necessary.
  b. System Protection Standards – SPCTF is already working on this.
  c. Unaddressed Protection Issues – SPCTF will address this at later meetings.
  d. BRRTF TR-22 – SPCTF is already working on this.
  e. BRRTF TR-20 – SPCTF is already working on this.

• 2007 Tasks with SPCTF Support Responsibilities
  a. Wrap Up of Outstanding Issues From August 2003 Blackout – Planning Committee leads
  b. Interconnection-Wide SC Database – Planning Committee leads – see our recommendation in PRC-001 report
  c. UFLS – Develop issues list (Coordinate with Distributed Generation) – TIS leads
  d. UVLS – Are criteria adequate – Develop issues list – TIS leads – IEEE PSRC also has a working group on UVLS per Tom Wiedman. PSRC would like a summary of what NERC’s doing in this area.
  e. Phasor Measurements – Planning Committee leads – Summarize NERC efforts and develop recommendations – WECC is developing a WAMS charter
  f. Nuclear Plant Coordination Issues – Define issues – TIS Leads

Action Item:

Bob Cummings will prepare a matrix for tracking the work plan items.


Responses have been prepared by the drafting team for comments from the latest posting. The drafting team has proposed that the standard be posted for pre-ballot without a field test. However, the Compliance group has recommended a field test, which will be discussed at the upcoming Standards Committee meeting. To
the drafting team, the issue seems to be whether the standard is posted for pre-ballot or for another comment posting.

11. SPCTF Meeting and Conference Call Schedule
   a. April 18-19 (Wednesday afternoon – Thursday morning, 1.5 days) – San Antonio, TX (back-to-back with TIS)
      Review of 3/31/07 Regional reports
   b. May 17-18 (Thursday – Friday, 1.5 days) – Nashville, TN (back-to-back with the IEEE PSRC)
      Review of 3/31/07 Regional reports and PRC-Series Standard review
   c. July 17-18 (Tuesday – Wednesday, 1.5 days) – Toronto or Denver (downtown)
   d. General meeting scheduling note: Planning Committee meetings are currently scheduled for March 21-22 and June 6-7, 2007. Agenda materials for PC meetings must be available at least two weeks prior to the PC meeting

12. Other Business
   None discussed.

These minutes were approved by SPCTF May 17, 2007.
NERC ANTITRUST COMPLIANCE GUIDELINES

I. GENERAL

It is NERC’s policy and practice to obey the antitrust laws and to avoid all conduct that unreasonably restrains competition. This policy requires the avoidance of any conduct that violates, or that might appear to violate, the antitrust laws. Among other things, the antitrust laws forbid any agreement between or among competitors regarding prices, availability of service, product design, terms of sale, division of markets, allocation of customers or any other activity that unreasonably restrains competition.

It is the responsibility of every NERC participant and employee who may in any way affect NERC’s compliance with the antitrust laws to carry out this commitment.

Antitrust laws are complex and subject to court interpretation that can vary over time and from one court to another. The purpose of these guidelines is to alert NERC participants and employees to potential antitrust problems and to set forth policies to be followed with respect to activities that may involve antitrust considerations. In some instances, the NERC policy contained in these guidelines is stricter than the applicable antitrust laws. Any NERC participant or employee who is uncertain about the legal ramifications of a particular course of conduct or who has doubts or concerns about whether NERC’s antitrust compliance policy is implicated in any situation should consult NERC’s General Counsel immediately.

II. PROHIBITED ACTIVITIES

Participants in NERC activities (including those of its committees and subgroups) should refrain from the following when acting in their capacity as participants in NERC activities (e.g., at NERC meetings, conference calls and in informal discussions):

- Discussions involving pricing information, especially margin (profit) and internal cost information and participants’ expectations as to their future prices or internal costs.
- Discussions of a participant’s marketing strategies.
- Discussions regarding how customers and geographical areas are to be divided among competitors.
- Discussions concerning the exclusion of competitors from markets.
- Discussions concerning boycotting or group refusals to deal with competitors, vendors or suppliers.

Approved by NERC Board of Trustees, June 14, 2002
Technical Revisions, May 13, 2005
III. ACTIVITIES THAT ARE PERMITTED

From time to time decisions or actions of NERC (including those of its committees and subgroups) may have a negative impact on particular entities and thus in that sense adversely impact competition. Decisions and actions by NERC (including its committees and subgroups) should only be undertaken for the purpose of promoting and maintaining the reliability and adequacy of the bulk power system. If you do not have a legitimate purpose consistent with this objective for discussing a matter, please refrain from discussing the matter during NERC meetings and in other NERC-related communications.

You should also ensure that NERC procedures, including those set forth in NERC’s Certificate of Incorporation and Bylaws are followed in conducting NERC business. Other NERC procedures that may be applicable to a particular NERC activity include the following:

- Reliability Standards Process Manual
- Organization and Procedures Manual for the NERC Standing Committees
- System Operator Certification Program

In addition, all discussions in NERC meetings and other NERC-related communications should be within the scope of the mandate for or assignment to the particular NERC committee or subgroup, as well as within the scope of the published agenda for the meeting.

No decisions should be made nor any actions taken in NERC activities for the purpose of giving an industry participant or group of participants a competitive advantage over other participants. In particular, decisions with respect to setting, revising, or assessing compliance with NERC reliability standards should not be influenced by anti-competitive motivations.

Subject to the foregoing restrictions, participants in NERC activities may discuss:

- Reliability matters relating to the bulk power system, including operation and planning matters such as establishing or revising reliability standards, special operating procedures, operating transfer capabilities, and plans for new facilities.

- Matters relating to the impact of reliability standards for the bulk power system on electricity markets, and the impact of electricity market operations on the reliability of the bulk power system.

- Proposed filings or other communications with state or federal regulatory authorities or other governmental entities.

- Matters relating to the internal governance, management and operation of NERC, such as nominations for vacant committee positions, budgeting and assessments, and employment matters; and procedural matters such as planning and scheduling meetings.

Any other matters that do not clearly fall within these guidelines should be reviewed with NERC’s General Counsel before being discussed.

Approved by NERC Board of Trustees, June 14, 2002
Technical Revisions, May 13, 2005