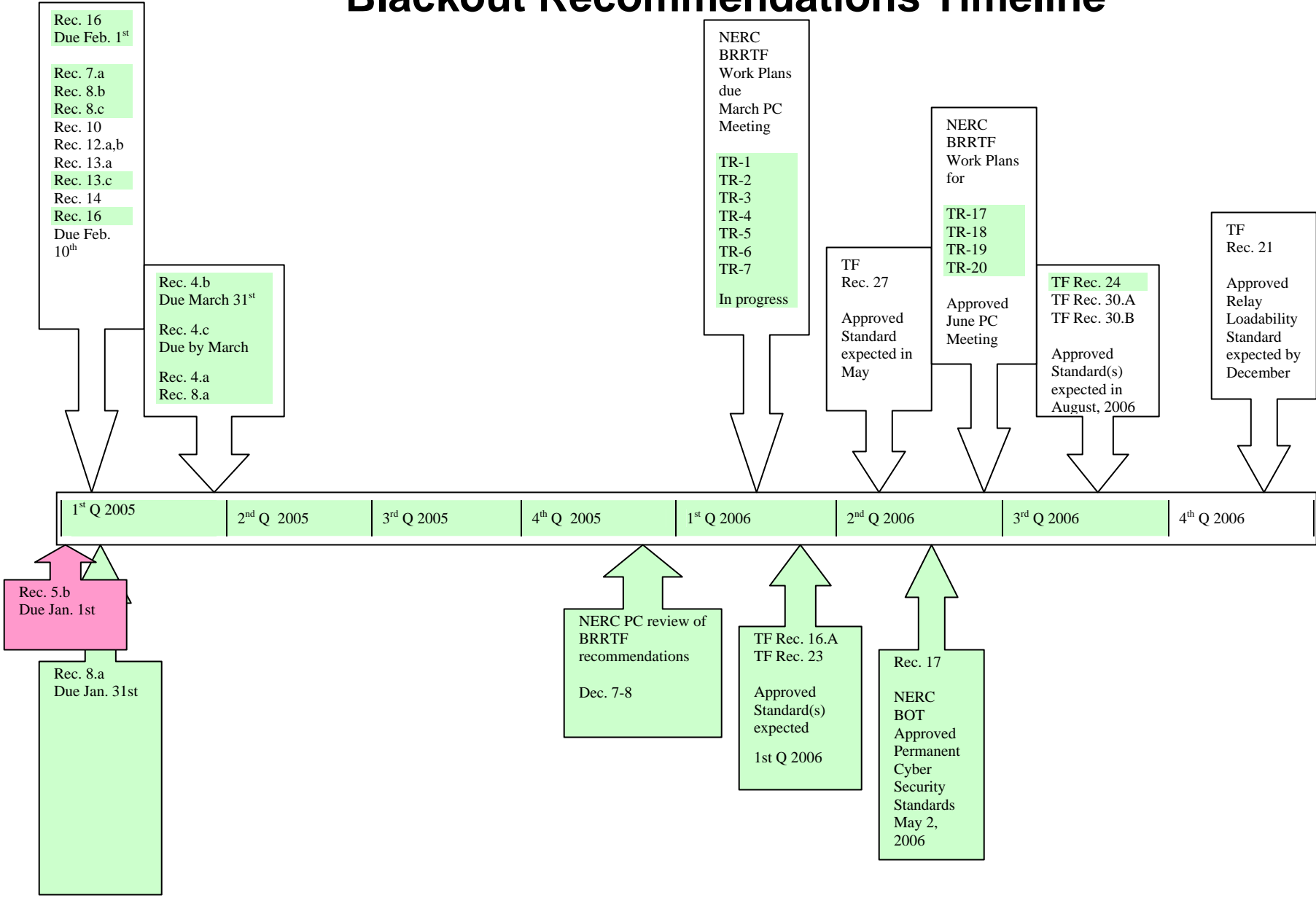


NPCC Tasks Related to NERC Blackout Recommendations Timeline



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NERC BOT #	Short Description									US-CA TF #	Comments
		NERC	Other(s)								
5.a	Recommendations Actions Tracking Program	X	NERC							5.A	<p>Rec. 5.a - RCC approved NPCC program and procedure July 14, 2004. The May 2006 NPCC Status Report was posted on the NPCC web site. The RCC agreed to quarterly updates and posting at their May 31, 2006 meeting.</p> <p>TF Rec. 5.A - NERC, DOE, FERC, and NRCAN continue development of a common database. Work underway to further develop NERC's existing database for tracking disturbances and unusual events. Completion scheduled for later in 2005. NERC is now looking to develop a web page for the Regions to monitor NERC requests made of them and the status of their responses.</p>
5.b	NERC Reliability Performance Monitoring		NERC							5.B	<p>Rec. 5.b - NERC is working with the Outage Task Force to develop a database to track and report progress in implementing all applicable blackout recommendations. Monitoring function is still under development. NERC initiated a collaborative effort with the NRC to analyze reliability performance trends.</p>

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10	Establish Guidelines for Real-Time Operating Tools	X	<p align="center">TR-3 Completed. TR-5 OC/IS TR-6 OC/SDX Task Force with MMWG</p>							22	<p>Rec. 10 - The CO-10 WG has identified the EMS/SCADA failure review practices used by the NPCC Areas, and have put in place practices to review and analyze at each meeting any EMS/SCADA failures, including the priority and time deadlines for restoring the systems to full capability. Completed. TF Rec. 22 - NERC's BRRTF related recommendations were approved by the NERC PC in December 2005 (TR-3,5,6). Work plans for these assignments will be submitted for approval at the March 2006 PC meeting. The NERC Real Time Tools Best Practices TF has received all survey responses and is analyzing the results. TFCO and CO-10 will review the findings when they are available and consider any necessary enhancements to NPCC operating tools. Incorporated into NERC's on-going best practices, standards development, and tools enhancement activities.</p>

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12.a	Regional Criteria for Synchronized Recording Devices	X	TR-10 PC/IDWG with SPCTF							28.B	<p>Rec. 12.a - The SEDR WG report on Synchronized Event Data Reporting was discussed at the June 1, 2005 RCC meeting, with presentation of the associated cost/benefit given at the Sept. 2005 RCC meeting. The NERC IDWG report was approved at the May 2005 NERC BOT meeting; they resolved that the regional reliability councils take steps to improve the disturbance monitoring capabilities as outlined in the report. TF Rec. 28.B. NERC's Blackout Recommendation Review Task Force related recommendations were approved by the NERC PC in December 2005 (TR-10). Work plans for these assignments will be submitted for approval at the March 2006 PC meeting. Incorporated into NERC's on-going standards development activities. Initial standards expected to be approved in early 2006; enhanced standards on phasor measurement devices by early 2007.</p>

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12.b	Dynamic Recorder Upgrade/Installation	X	TR-10 PC/IDWG with SPCTF							28.A	<p>Rec. 12.b - The SEDR WG report on Synchronized Event Data Reporting discussed at the June 1, 2005 RCC meeting. Presentation of the associated cost/benefit given at the Sept. 2005 RCC meeting. The NERC IDWG report approved at the May 2005 NERC BOT meeting; they resolved that the regional reliability councils take the outlined steps to improve disturbance monitoring capabilities.</p> <p>TF Rec. 28.A - BRRTF related recommendations were approved by the NERC PC in December 2005 (TR-10). Work plans for these assignments will be submitted for approval at the March 2006 PC meeting. Incorporated into NERC's on-going standards development activities. Initial standards expected to be approved in early 2006; enhanced standards on phasor measurement devices by early 2007. Cost recovery responsibility of FERC and appropriate regulatory authorities in Canada.</p>

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13.a	Reevaluate System Operations Planning and Operating Criteria	X	NERC OC							30.A	<p>Rec. 13.a - NERC's Blackout Recommendation Review Task Force related recommendations were approved by the NERC PC in December 2005 (TR-6). Work plans for these assignments will be submitted for approval at the March 2006 PC meeting.</p> <p>TF Rec. 30.A The RCC approved the Evaluation Study Plan for NPCC Document A-10 at their Sept. 7, 2005 meeting, and reviewed a list of existing NPCC Area BPS elements and schedule for completion of testing at its November 2005 meeting. Revised NPCC Document A-10 expected to be submitted for RCC approval in November 2006. Rec. 30.A incorporated into NERC's on-going standard development activities. Expect approval by August 2006.</p>

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14	Model Data Validation	X	<p align="center">TR-4 PC/MMWG with TIS & OC/DFWG</p> <p align="center">TR-9 PC/MMWG with TIS/SPCTF/ RIS</p> <p align="center">TR-12,13 PC/MMWG with TIS</p>							24	<p>Rec. 14 - NERC is moving ahead with development and implementation of the "Phase III & IV" planning standards, which include model validation. Consequently, the TFSS proposes to postpone consideration of new NPCC procedures pending developments regarding related NERC standards. NERC's Blackout Recommendation Review Task Force related recommendations were approved by the NERC PC in December 2005 (TR-4,9,12,13). Work plans for these assignments will be submitted for approval at the March 2006 PC meeting.</p> <p>TF Rec.24 Planning Standards MOD-013-1 and MOD-016-1 were approved by the NERC BOT on May 2, 2006. These standards become effective November 2, 2006.</p>

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15	NERC to investigate future blackouts and disturbances	X								14	<p>Rec. 15 - NERC has developed Blackout Disturbance and Response Procedures, which include requirements for the analysis of blackouts. These procedures were accepted by the board in May 2005, with the direction to obtain further input from the NERC standing committees and other stakeholders as the procedures are refined and upgraded.</p> <p>TF Rec. 14 - Creation of a standing Binational ERO Oversight Group has been completed. A bilateral working group from the United States and Canada will address key issues related to electricity reliability in North America. The terms of reference were announced June 30, 2005.</p>

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	Develop Enforceable Standards for Transmission Line Ratings	X	PC/Ratings							27	<p>TF Rec. 27 - One of the Determine Facility Ratings groups of standards (FAC-010-1 and FAC-011-1) were balloted as a single ballot from March 21 through March 30, 2006. Nearly one third of the ballot pool voted against the proposed standards because they believed it would weaken reliability rather than strengthen it; the drafting team revised the standards based on the comments received and post the revised standards for public comment. FAC-010-1, FAC-011-1, and FAC-014-1 were posted for 30-day pre-ballot Review August 18 through September 18, 2006. The drafting team is considering the comments received from the ballot. A recirculation ballot will be conducted on or about October 12, 2006.</p>

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	Evaluate Relay Loadability Issues (Zone 3) and Implement Mitigation Measures	X	PC/SPCTF								TR-1 - Evaluate Relay Loadability Issues (Zone 3) and Implement Mitigation Measures. In progress. SPCTF Zone 3 EHV Review results approved at September 2006 PC meeting. SPCTF to report to PC at their December 2006 meeting on Beyond Zone 3 Activity.
	Establish Guidelines on the Use of Remote Back-Up Protection Systems in EHV Networks	X	PC/SPCTF with OC/TS								TR-2 - Establish Guidelines on the Use of Remote Back-Up Protection Systems in EHV Networks. In Progress.
	Modify the Interchange Distribution Calculator (IDC) to Increase Operational Awareness of the Causes of Circuit Loading	X	OC/IDCWG								TR-3 - Modify the Interchange Distribution Calculator (IDC) to Increase Operational Awareness of the Causes of Circuit Loading. Completed.

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	Improve Powerflow Modeling Techniques and Correct Discrepancies	X	PC/MMWG with TIS & OC/DFWG								TR-4 - Improve Powerflow Modeling Techniques and Correct Discrepancies. In progress.
	Strengthen Standards on Tagging of Dynamic Schedules and Pseudo Ties	X	OC/IS								TR-5 - Strengthen Standards on Tagging of Dynamic Schedules and Pseudo Ties. In progress.
	Improve System Data Exchange to Update IDC and Other Reliability Analysis Systems	X	OC/SDXTF with MMWG								TR-6 - Improve System Data Exchange to Update IDC and Other Reliability Analysis Systems. In progress - MMWG is preparing a business case for the development of a Topological Database, to be presented to the PC for their review/approval.

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	Evaluate and Implement Under-Voltage Load Shedding (UVLS) In Areas Susceptible to Voltage Collapse	X	PC/TIS & SPCTF								TR-7 - Evaluate and Implement Under-Voltage Load Shedding (UVLS) In Areas Susceptible to Voltage Collapse. TIS developed "Guidelines for Developing an Undervoltage Load Shedding " was approved by the PC in September 2006, and will be sent for BOT review/approval at their October 2006 meeting.
	Evaluate and Strengthen Under-Frequency Load Shedding (UFLS) Standards to Enhance Performance Under Severe System Conditions	X	PC/IDWG with SPCTF & TIS								TR-8 - Evaluate and Strengthen Under-Frequency Load Shedding (UFLS) Standards to Enhance Performance Under Severe System Conditions (IDWG to lead combined scope of TR-8 & TR-21). The PC approved the recommendation in December 2005, with the understanding that the subgroups will develop their respective work plans for these assignments for review and approval at the March 2006 PC meeting.

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	Clarify Generation Data Exchange Requirements and Evaluate Generator Protection to Ensure Coordination with Transmission System Protection Functions	X	PC/MMWG with TIS/SPCTF/RIS								TR-9 - Clarify Generation Data Exchange Requirements and Evaluate Generator Protection to Ensure Coordination with Transmission System Protection Functions. The PC approved the recommendation in December 2005, with the understanding that the subgroups will develop their respective work plans for these assignments for review and approval at the March 2006 PC meeting.
	Standardize Disturbance Data Recorder Systems	X	PC/IDWG with SPCTF								TR-10 - Standardize Disturbance Data Recorder Systems. The PC approved the recommendation in December 2005, with the understanding that the subgroups will develop their respective work plans for these assignments for review and approval at the March 2006 PC meeting.

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	Enhance Standards for Rating Transmission Lines	X	PC								TR-11 - Enhance Standards for Rating Transmission Lines. The PC approved the recommendation in December 2005, with the understanding that the subgroups will develop their respective work plans for these assignments for review and approval at the March 2006 PC meeting.
	Improve and Validate Dynamic Models.	X	PC/MMWG with TIS								TR-12 - Improve and Validate Dynamic Models. The PC approved the recommendation in December 2005, with the understanding that the subgroups will develop their respective work plans for these assignments for review and approval at the March 2006 PC meeting.

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	Improve Transactional Analysis and Generation Dispatch in Regional and Interregional Studies	X	PC/MMWG with TIS								TR-13 - Improve Transactional Analysis and Generation Dispatch in Regional and Interregional Studies. The PC approved the recommendation in December 2005, with the understanding that the subgroups will develop their respective work plans for these assignments for review and approval at the March 2006 PC meeting.
	Establish and Implement Mapping Deliverables/Requirements for Disturbance Analysis (geographical maps and one-line diagrams).	X	OC/DAWG with IDWG								TR-14. NERC should specify a standard set of system maps to be maintained and supplied for analysis of system disturbances. Maps should be regularly updated to reflect changes in system topology or generation facilities. Improvements to the Reliability Coordinator Information System include system flowgate maps. Recommendation approved by the NERC PC in December 2005. Work plans for this assignments will be submitted for approval at the March 2006 PC meeting.

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	Establish EMS and SCADA Time Synchronization Standards	X	OC/Data Exchange WG with PC IDWG/SPCTF								<p>TR-15a. EMS hardware and software designs should be accommodate time stamps recorded by remote telemetry units (RTUs). Each substation should have GPS synchronization capabilities.</p> <p>TR-15b. All real-time data exchanged via ICCP data (volts, flow, frequency data, ACE) between operating entities should be similarly time stamped, and those time stamps should be included in all transmittals.</p> <p>TR-15c. Data collection should be well monitored to detect equipment failures and data quality problems.</p> <p>TR-15d. Standards for data retention and archiving should be established. Recommendations approved by the NERC PC in December 2005. Work plans for these assignments will be submitted for approval at the March 2006 PC meeting.</p>

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	Evaluate and Implement "Defense in Depth" System Monitoring, Control, and Protection Measures to Slow Down and Mitigate the Severity of Cascades.	X	16a: PC/IDWG with TIS/SPCTF 16b: OC/ORS with TS								<p>TR-16. For each of the Interconnections, a defense-in-depth philosophy and integrated strategy should be developed based on the characteristics of that interconnection to limit the impacts of potential cascading outages. The Operating Reliability Subcommittee and Transmission Subcommittee are forming an operations planning task force to work on this. Recommendation approved by the NERC PC in December 2005. Work plans for this assignments will be submitted for approval at the March 2006 PC meeting.</p>
	Review the Response of Switch-on-to-Fault Relay Functions to System Disturbances.	X	PC/SPCTF								<p>TR-17. It is recommended that the SPCTF review the concept of "switch-onto-fault" logic and settings in relaying systems, and prepare a report for the Planning Committee on its merits, deficiencies, and setting requirements. Recommendation approved by the NERC PC in December 2005. Work planned by the SPCTF for this assignments approved at the March 2006 PC meeting; SPCTF Technical Document approved by the PC at its June 2006 meeting.</p>

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NERC BOT #	Short Description									US-CA TF #	Comments
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	Revise Industry Standards to Establish Under/Over Frequency Design Limits of Operation for Distance Relays.	X	PC/SPCTF								TR-18. Standardize a frequency floor above which relays should not trip. Such a frequency set point should be coordinated with UFLS and generator underfrequency tripping schemes. IEEE Standard C37.90 should be revised to include this limit. Recommendation approved by the NERC PC in December 2005. <i>Work planned by SPCTF for this assignment approved at the March 2006 PC meeting; SPCTF to work with the IEEE PSRC to develop IEEE Standard requirements for distance relay performance.</i>

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	Evaluate and Report on the Performance and Complexity of Protection and Control Schemes for Three Terminal Lines	X	PC/SPCTF with TIS								TR-19. NERC should review and report on the advantages and disadvantages of the use of multi-terminal line configurations on the EHV system, and any associated complex protection and control (sequential) schemes. Particular attention should be paid to the performance of such configurations and its protection during emergency operation conditions, including expected system swings. Work planned by the SPCTF for this assignment approved at the March 2006 PC meeting. SPCTF information paper addressing the issue was approved by the PC at their September 2006 meeting.

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	Establish Guidelines on High Speed Reclosing.	X	PC/SPCTF								<p>TR-20. Not started. NERC should review and report on the advantages and disadvantages of autoreclosing methods on the EHV system including:</p> <ul style="list-style-type: none"> • High speed automatic reclosing for multi-phase and single phase relay operation • Synchronism check reclosing <p>Recommendations approved by the NERC PC in December 2005.</p> <p><i>Work planned for this assignment by SPCTF was approved at the March 2006 PC meeting; SPCTF plans to use IEEE work products and IEEE expertise to pursue.</i></p>
	Require the Installation of Underfrequency Protection for Generators and Coordination with UFLS.	X	PC/IDWG with SPCTF								<p>TR-21. Underfrequency relaying should be installed on all generators, coordinated with the underfrequency load shedding relays (IDWG to lead combined scope definition of TR-8 & TR-21) Inter-regional planning study may be needed. Recommendation approved by the NERC PC in December 2005. Work plans for this assignments will be submitted for approval at the March 2006 PC meeting.</p>

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	Evaluate and Implement Coordination Requirements for Generator Backup Protection Responses in Cohesive Generation Groups.	X	PC/SPCTF with IDWG/RCWG								TR-22. NERC should evaluate these protection schemes and their settings for appropriateness including coordination of protection and controls when operating within a coherent generation weakly connected to an interconnection or in as an electrical island. Generators directly connected to the transmission system using a 51V should consider the use of an impedance relay instead. Not started. Recommendation approved by the NERC PC in December 2005. Work plans for this assignments will be submitted for approval at the March 2006 PC meeting.

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	Establish Regime for More In-Depth Analysis in Transmission Reliability Studies.	X	OC & PC/TIS with MMWG								<p>TR-23a. NERC should re-examine the appropriateness of the 30-minute criteria for returning to a safe operation following an outage. Not started.</p> <p>TR-23b. NERC, the Regions, and the ISO/RTOs should conduct a comprehensive analysis of the bulk power system for identification of severe combinations of contingencies. Not started.</p> <p>TR-23c. NERC, the Regions, and the ISO/RTOs should develop study regimes that determine severe combinations of contingencies. Not started. Recommendations approved by the NERC PC in December 2005. Work plans for these assignments will be submitted for approval at the March 2006 PC meeting.</p>

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	Continue "What if" Analyses, Promote Research Based on the Blackout, and Preserve Forensic Analysis Techniques.	X	PC/TIS with MMWG/IDWG /DAWG								TR-24. Evaluate significant "what-if" scenarios to learn how the overall system may have performed given varying system conditions or different sequence of events. Those studies should investigate the feasibility of preventative and "safety net" mitigation strategies. Not started. Recommendation approved by the NERC PC in December 2005. Work plans for this assignments will be submitted for approval at the March 2006 PC meeting.
	NBR - 1a) Review Type 1 and Type 2 Special Protection Systems (SPSs) that use indirect sensing to determine whether any improvements are warranted that could be made relatively easily and that would reduce the likelihood of their operating for conditions other than those for which they are designed.		TFSS TFSP								NBR - 1a) - RCC approved the recommendation at its March 8, 2006 meeting. TFSP is taking the lead on initial review and listing. TFSS will request SPS owners to consider improvements.

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	<p>NBR - 1b) Review Type 1 and Type 2 Special Protection Systems (SPSs) that use indirect sensing to determine whether any improvements are warranted that could be made relatively easily and that would reduce the likelihood of their operating for conditions other than those for which they are designed. More specifically, the review of improvements to the "Loss of 3001" SPS should be considered and is recommended first.</p>		<p>TFSS TFSP</p>								<p>NBR - 1b) - RCC approved the recommendation at its March 8, 2006 meeting. NB Power plans to replace this SPS with the proposed Maritimes islanding SPS in 2007.</p>

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	<p>NBR - 2a) Protection system changes should be investigated on two specific NPCC interfaces whose performance proved to be critical during the Blackout sequence of events. Transmission owners should investigate changes that could be made to improve the security of protection operation of the Homer City 345 kV transmission lines to Watercure and Stolle Road and recommend any proposed changes to TFSS and TFSP.</p>		<p>TFSS TFSP TOs</p>								<p>NBR - 2a) - RCC approved the recommendation at its March 8, 2006 meeting. TFSP has received information from the NPCC transmission owner. FirstEnergy will investigate changes in 2008.</p>

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	<p>NBR - 2b) Protection system changes should be investigated on two specific NPCC interfaces whose performance proved to be critical during the Blackout sequence of events. TFSS should investigate whether separating Ontario from Michigan for conditions similar to those experienced during the blackout would improve reliability for other conditions and would not degrade reliability, under most circumstances for both NPCC and other Regions.</p>		TFSS								<p>NBR - 2b) - RCC approved the recommendation at its March 8, 2006 meeting. TFSS to consider in September 2006.</p>

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	NBR - 3) NPCC should complete the implementation of the 300 ms time delay on UFLS relays as determined in the 2002 UFLS Assessment and approved by RCC.		TFSS TFSP								NBR - 3) - RCC approved the recommendation at its March 8, 2006 meeting. This project is underway, on schedule and no additional action needs to be taken.

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	<p>NBR - 4) NPCC should continue to investigate the coordination between generating unit (generator, excitation system, and prime mover) protections and the UFLS program through its representation on the NERC System Protection and Control Task Force (SPCTF). TFSS and TFSP should conduct a review of NPCC Criteria to ensure that any required coordination between the UFLS program and generators is included.</p>	SPCTF	TFSS TFSP								<p>NBR - 4) - RCC approved the recommendation at its March 8, 2006 meeting. Nuclear Plant Owners have commented on NPCC Document A-03 for UFLS coordination with nuclear unit protection. SS-38 is conducting a study of the NPCC UFLS program; study completion expected by the end of 2006.</p>

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		NERC	Other(s)								
	<p>NBR - 5a) TFSS should ensure that future assessments of the Underfrequency Load Shedding (UFLS) Program include:</p> <p>a) Sensitivity studies to examine the impact of unexpected load or generation loss near the electrical center of unstable swings during island formation.</p>		TFSS								<p>NBR - 5a) - RCC approved the recommendation at its March 8, 2006 meeting. Assigned to SS-38; study completion expected by the end of 2006.</p>

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NPCC/NERC Board/US-Canadian TF Recommendations on Blackout

P = Primary, S = Secondary, J = Joint; Green = Completed, Yellow = Ahead of Schedule, Clear = On Schedule, Pink = Behind Schedule

NERC BOT #	Short Description									US-CA TF #	Comments
		NERC	Other(s)								
	<p>NBR - 5b) TFSS should ensure that future assessments of the Underfrequency Load Shedding (UFLS) Program include: b) Simulation of island formation across Area and regional boundaries and modeling more severe conditions including modeling of initiating disturbances and non-coincident tripping of circuits across the island boundary.</p>		TFSS								<p>NBR - 5b) - RCC approved the recommendation at its March 8, 2006 meeting. Assigned to SS-38; study completion expected by the end of 2006.</p>

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NERC BOT #	Short Description									US-CA TF #	Comments
		NERC	Other(s)								
	<p>NBR - 5c) TFSS should ensure that future assessments of the Underfrequency Load Shedding (UFLS) Program include: c) The impact of low voltages on UFLS relay performance including under-voltage supervision and accuracy of frequency measurements (as determined by TFSP).</p>		<p>TFSS TFSP</p>								<p>NBR - 5c) - RCC approved the recommendation at its March 8, 2006 meeting. Assigned to SS-38; study completion expected by the end of 2006.</p>

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NERC BOT #	Short Description									US-CA TF #	Comments
		NERC	Other(s)								
	<p>NBR - 5d) TFSS should ensure that future assessments of the Underfrequency Load Shedding (UFLS) Program include: d) Identification of large load areas within NPCC that are frequently deficient in generation by more than 25% and that are susceptible to islanding and assessment of the performance of such islands.</p>		TFSS								<p>NBR - 5d) - RCC approved the recommendation at its March 8, 2006 meeting. Assigned to SS-38; study completion expected by the end of 2006.</p>

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NERC BOT #	Short Description									US-CA TF #	Comments
		NERC	Other(s)								
	<p>NBR - 6a) NPCC should strive to make improvements in modeling tools and data. The TFSS should survey what methods are available now within NPCC to create accurate power flow models based on actual operating data, what initiatives are underway by NERC, how much effort it would take to develop a common approach within NPCC and any costs associated with these.</p>		TFSS								<p>NBR - 6a) - RCC approved the recommendation at its March 8, 2006 meeting. Assigned to SS-37 for a fall 2006 survey. This recommendation is under review by SS-38, as part of its update of NPCC Document C-25.</p>

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NERC BOT #	Short Description									US-CA TF #	Comments
		NERC	Other(s)								
	<p>NBR - 6b) NPCC should strive to make improvements in modeling tools and data. NPCC should assess what methods would be most effective for modeling mid-term dynamics in analysis of disturbances that propagate over a significant time period. Specifically, TFSS should document what was learned during the blackout investigation regarding the modeling of mid-term dynamic effects. TFSS should also summarize recent industry efforts.</p>		TFSS								<p>NBR - 6b) - RCC approved the recommendation at its March 8, 2006 meeting. Under review by SS-38, in parallel with the UFLS study. HQ plans to document its experience and describe the tools it has developed for mid-term dynamic modeling for the TFSS.</p>

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NERC BOT #	Short Description									US-CA TF #	Comments
		NERC	Other(s)								
	<p>NBR - 6c) NPCC should strive to make improvements in modeling tools and data. Event recording devices should be time synchronized to allow expedient development of an accurate and precise Sequence of Events following system disturbances. TFSP should determine whether existing NPCC criteria is sufficient to ensure that recording devices for generating units document event times for mechanical and electrical protection and control actions.</p>		TFSP								<p>NBR - 6c) - RCC approved the recommendation at its March 8, 2006 meeting. TFSP has developed a new NPCC B-26 Document. TFSS is reviewing the NERC Reliability standards for comparison with NPCC documents and plans to make a recommendation in the fall of 2006.</p>

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NERC BOT #	Short Description									US-CA TF #	Comments
		NERC	Other(s)								
	<p>NBR - 6d) NPCC should strive to make improvements in modeling tools and data. The TFSS should review past industry efforts to study dynamic load behavior, such as the NPCC COSS-2 Study, and contact others within the industry to benefit from their research. The TFSS should recommend whether to develop improved models for use in analysis of major disturbances or to develop appropriate models at the time of analyzing a disturbance.</p>		TFSS								<p>NBR - 6d) - RCC approved the recommendation at its March 8, 2006 meeting. Under review by SS-38, in parallel with the UFLS study.</p>