

# **2002 NERC Compliance Enforcement Program**

**North American Electric Reliability Council**

May 7, 2003  
Revised June 11, 2003



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## Executive Summary

The Compliance Enforcement Program (CEP) is designed to monitor compliance with NERC reliability standards. This is accomplished through monitoring, assessment and, where appropriate, penalties and sanctions designed to protect the reliability of the North American bulk electric system.

Some Regions apply actual penalties and sanctions on their members, while others utilize simulated enforcement actions. The objective of the CEP is not to collect monetary sanctions; rather it is to encourage compliance with the standards necessary to preserve the reliability of the grid.

### 2002 Program Highlights

#### Compliance Template Measures Mature

The CEP presently applies compliance measures to NERC's existing operating policies and planning standards. The measures utilized in the program have matured through the process of field-testing over several years.

The 2002 CEP contained only compliance measures that were included in previous years' programs. New measures will be introduced into the program as they emerge from NERC's new reliability standards development process. No additional measures will be developed from the existing operating policies or planning standards.

#### Program Extended to a Full Year

The 2002 CEP was extended to a full calendar year. In previous years the program operated in a field test mode where measures were monitored for a partial year, which allowed for adjustments to the measures between years. The 2002 CEP offered the perfect opportunity to extend the program since no new measures were introduced.

#### Compliance Process Continues to Improve

The 2002 CEP continued to test the effectiveness of the compliance process. Improvements identified in the 2001 program were implemented in 2002, and included compliance assessments of 27 measures. In the spirit of continuous program improvement, this report highlights the observations, results, and recommendations from the 2002 program that will be considered in future years.

#### Overall Compliance Improves, But Violations Were Found

Since its inception, the CEP has found improved compliance with NERC operating policies and planning standards. However, a significant number of violations of specific compliance measures were reported. A significant number of operator certification requirement and operating security limit (OSL) violations were reported, although the level of non-compliance with the OSL measure was lower than in 2001.

This report provides statistical information of compliance with the NERC standards, as well as qualitative discussions to supplement the results. The discussions offer insight into the causes of these violations, and identify known regional plans to minimize such violations in the future.

#### Future Program Improvements

This report provides recommendations to further develop and improve the CEP. Specifically, these recommendations encourage the Regions to:

- Conduct rigorous validation (such as on-site member audits) to ensure the quality, accuracy and completeness of self-certification submittals;

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- Develop and implement appropriate exception reporting processes;
- Evaluate the benefits of hosting annual compliance workshops;
- Actively participate in the transition from the operating policies and planning standards to reliability standards; and
- Develop a reporting process to monitor regional CEP performance throughout the year.

### **Program Oversight — Audits of Regional Programs**

NERC is responsible for overseeing the performance of regional compliance enforcement programs. In 2002, NERC staff audited the 2001 FRCC, NPCC, and SPP programs. This proved to be a productive and beneficial process for both NERC staff and the Regions that were audited. In 2003, the staff will audit the 2002 programs of ERCOT, MAIN, and WECC.

### **Reliability Coordinator Audits**

The NERC compliance staff, in conjunction with regional compliance staffs, has completed a review of all NERC reliability coordinators as directed by the Board of Trustees. The process began in the fall of 2001 and was completed in November 2002. Overall, the audits found that the reliability coordinators are taking appropriate actions to preserve reliability. However, most audits provided recommendations for improvement. Some issues were identified concerning delegation of authority that will need to be addressed in the reliability standards as they are developed.

All parties involved in the compliance process continue to believe that compliance with NERC and regional reliability standards is vital to preserving the reliability of the bulk electric system. It is of paramount importance for NERC and the Regions to continually strive to improve the CEP if they are to carry out their mission “to keep the lights on.”

### Introduction

The Compliance Enforcement Program is designed to monitor compliance with NERC reliability standards to ensure the reliability of the North American bulk electric system. This is accomplished through monitoring, assessment, and imposing penalties and sanctions (where appropriate). The CEP places significant emphasis on encouraging good reliability performance by conducting on-site audits of control areas, reliability coordinators, and Regions in an effort to identify and resolve compliance issues before they become reliability problems.

The CEP comprises ten regional programs. In most cases, the regional councils monitor their members and others operating within their Region for compliance with the standards. NERC provides oversight and coordination of the overall program. In those cases where the standards call for compliance by the Regions, NERC staff monitors regional compliance with those standards.

NERC has implemented a new process to develop reliability standards that will replace the current planning standards and operating policies. A key change is the inclusion of compliance administration requirements as a part of the standard itself, as opposed to creating separate compliance templates after the standard is developed. Because of this change in approach, the CEP has ceased to develop additional compliance templates based on the planning standards and operating policies. The NERC standing committees and the Compliance Managers Committee have agreed that any new measures introduced into the program will be developed through the new standards process. As such, no new measures were introduced for field-testing in 2002, which provided the opportunity to transition the program to a full calendar year.

Some Regions have approved processes for applying actual penalties and sanctions while others continue to utilize simulated enforcement actions. The objective of the CEP is not to impose monetary sanctions; rather it is to encourage compliance with the standards necessary to preserve the reliability of the grid.

This report presents the results from the 2002 Compliance Enforcement Program. Lessons learned from the 2001 program were successfully incorporated into the 2002 program. In the spirit of striving for continuous program improvement, this report highlights the observations, results, and recommendations from the 2002 program that will be considered in future years.

### 2002 Compliance Enforcement Program Measures

The NERC Regions implemented the 2002 CEP with the intention of further testing regional and NERC compliance processes as well as the NERC standards and compliance measures. The regional compliance enforcement programs, NERC subgroups, the Compliance Review Subcommittee (CRS), the Compliance Subcommittee (CS), and the Compliance Managers Committee (CMC) all played a role in this process.

Twenty-seven measures were included in the 2002 Program: 10 planning and 17 operating measures, which are listed in Appendix B and Appendix C, respectively. A brief description of each measure, including application and monitoring responsibilities, is provided. Some Regions included additional measures in their programs. The 2001 program consisted of 60 measures, 24 of which carried over in the 2002 Program.

### Program Observations

NERC is responsible for overseeing the regional compliance programs. The Regions were asked to complete a questionnaire when submitting their 2002 program results. A review of their responses resulted in the following observations:

#### Implementation Plan

All Regions generally followed the implementation plans that they submitted to NERC. These plans were reviewed by the CMC and approved by NERC's director of compliance. In a few cases, the Regions deviated from their approved implementation plans by deferring some on-site compliance reviews to 2003.

#### Communications

The CEP implemented a number of communication improvements throughout the Regions in 2002 to enhance the program. These included everything from general improvements in the way Regions communicate with their members to the implementation of a new web-based reporting system in one Region. Other Regions are now considering implementing similar systems in 2003. Improved communications activities included:

- Use of reminder notices
- Flexibility in dealing with lateness issues when justified
- Compliance workshops
- Internet utilization
- Electronic reporting systems
- Informational site visits and telephone discussions with regional compliance staff

Half of the Regions conducted workshops that addressed both NERC and regional programs. These workshops enabled the Regions to effectively present their reporting requirements and provide a forum to share program experiences. Improvements suggested for future workshops included greater focus on the current program requirements; and utilizing a more hands-on approach in the workshops, including guidance in completing the self-certification forms.

Regions that did not conduct an annual compliance program workshop used alternate means to effectively communicate program information with their members. Program information was disseminated at Regional committee meetings through their website, via email, and telephone. Similar compliance program workshops are planned for 2003.

Improved communications has resulted in fewer late responses from the regional members, demonstrating the benefit of and need for continued improvement in this area.

#### Self-Certifications

All Regions reported that the use of self-certification continues to work well. The use of self-certification expanded in 2002 to minimize the exchange of large quantities of data and thus streamline the reporting process. A high percentage of operating and planning compliance measures were self-certified. All Regions obtained officer, committee representative or manager/director level signatures of authority on the self-certifications. This resulted in a high awareness of the CEP and produced accurate and consistent self-certifications. One Region that implemented a web-based reporting system noted that the time to complete the self-certification was significantly reduced.

### **Validation of Self-Certification Process**

The Regions took additional steps in 2002 to verify the validity and completeness of self-certifications. There was a marked increase in the number and scope of formal audits conducted. Good correlation was obtained between the audit results and the self-certification submittals. This more comprehensive process has elevated the level of confidence in using self-certifications. Some Regions conducted extensive audits that included every planning and operating measure for all members while others audited a select number of measures. One Region field-tested a planning audit process. The validation of the self-certifications was supplemented by spot-checks of sample measures.

### **Exception Reporting**

Almost half of the Regions require an affirmative response from their members to verify they did not experience reportable events. Other Regions solely rely on established reporting procedures to report disturbances.

### **Enforcement**

All ten Regions sent letters to their members identifying violations of compliance measures and mitigation plan requirements. Seven regions included simulated financial penalties in their notification of compliance violations.

### **Small Entities**

In 2001, some small entities were struggling with the requirements of the program, but a maturing compliance program, combined with no new compliance measures, allowed some of the small entities to 'catch-up' with and meet the program's requirements in 2002. The improvement was mainly attributed to regional compliance staff support, the types of measures included in the 2002 program, and the refinement of program processes and procedures.

Some small entities, especially those on the perimeter of a Region, have questioned the need and value of being included in the program. This year, however, only one Region encountered significant compliance problems with small entities that had experienced an unexpected turnover of system operators. Replacing these operators with NERC-certified operators has been difficult, primarily due to the requirements of company and union placement policies.

### **Non-Members**

Some Regions are still seeing non-participation by entities that are not Regional Reliability Council members. These Regions believe that until the United States Congress enacts enabling reliability legislation, regional members should include requirements for adherence to existing NERC and regional policies and procedures in their interconnection agreements with non-members.

### **Mitigation Plans**

All Regions requested and obtained mitigation plans from those entities that were assessed for non-compliance with program requirements. The requirement that entities submit mitigation plans for non-compliance with program measures continues to be an issue of discussion among regional compliance program staff. Most Regions require mitigation plans for all levels of non-compliance. One Region requested that mitigation plans be required only for Level 3 and Level 4 violations, unless an increase is observed for Level 1 and 2 violations. Another Region did not require mitigation plans for violations of NERC CEP measures that are a part of its own voluntary enforcement program.

### **Regional Program Strengths**

This year the Regions were asked to identify the top three strengths of their respective programs. These included:

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- Communication
- Member participation
- Internal regional processes
- Performance tracking
- Staff expertise
- Independence
- Consistent treatment with members
- On-site review (audit) program
- Relationship with members
- Electronic medium
- Member's desire for compliance
- Coordination between NERC and regional enforcement programs
- Flexibility

### **Regional Program Areas for Improvement**

The Regions were also asked to identify those areas that could be improved or enhanced. Areas for improvement include:

- Communication with non-members within the Region
- Electronic reporting system enhancements
- More flexible reporting techniques for members
- Improved website information
- Clarification of compliance measure requirements
- Timeliness of data submittals
- Mitigation plans provided by all members
- Expansion of planning audit program
- Clear delineation of job responsibilities of regional compliance staff and other regional support staff
- Evaluation of appropriateness of penalty/sanction matrix
- Better identification of applicability, responsibility, and accountability between regional members and associated RTO and control area membership

### **Effect of Compliance Violations on System Reliability**

The Regions were asked to judge whether any compliance violation reported in 2002 could have had a significant effect on system reliability. One Region indicated that it could not determine the extent to which the system would have been adversely impacted by OSL violations without knowing the exact flows on other interacting transmission paths or the exact conditions at the time of the violations. A second Region expressed concern that its OSL violations increased regional exposure to post-contingency cascading or instability, however, believes conservative operational limit calculations offset such risks.

### Staffing Requirements

Most Regions indicated that current compliance enforcement program staffing is adequate, but that additional resources will be needed as the CEP develops. Less staff effort was needed following the implementation of an electronic reporting system in one Region.

### General Program Comments

Appendix G contains a listing of general program comments received from the Regions. These comments will be reviewed and provided to the appropriate NERC and regional committees.

### Program Results

The 2002 program results demonstrate the NERC Regions and their members are about 94% in compliance with the 2002 program measures: 89% for planning and 95% for operating measures. A total of 541 violations were reported, with corresponding simulated sanctions of approximately \$9.1 million. There were 97 planning measure violations reported, with \$90 thousand in simulated sanctions. There were 444 operating measure violations reported, with \$9.0 million in simulated sanctions. The 2002 program saw approximately a 50% reduction in the total number of violations over 2001 for the planning and operating measures that were monitored in both years; these represent 89% of all the measures. Appendix A contains the statistics for all levels of non-compliance for 2002 planning and operating measures.

The CMC formed the Compliance Statistics Self-Directed Work Team (CSSDWT) to develop a consistent, standardized format for reporting compliance statistics. For example, some planning and operating measure violations will only be reported by occurrence. A compliance performance percentage will be computed for all other measures. To achieve full compliance, a Region would need to demonstrate 100% compliance with measures included in the compliance calculation and experience no violations for those measures reported by occurrence. The performance statistics presented in the appendices to this report employ this newly developed format and methodology. Unfortunately, this new methodology, coupled with the extension of the compliance-reporting period to a full calendar year, does not allow for direct comparisons of the statistical results from previous years.

A significant number of entities did not respond to requests for information. However, there is a marked reduction in such non-submittals compared to last year due to greater regional outreach to members. Generally, these entities are not members of a NERC Region and cannot, at present, be required to submit this data to the Regions.

Some of the reasons for the improved compliance in 2002 include:

- Enhanced communications between the Regions and their members
- Maturing compliance programs and increased experience with the compliance measures
- An expanded compliance staff monitoring function in some Regions
- The implementation of on-site review programs
- The use of electronic reporting systems
- An increase in the number and scope of audits and spot checks
- The implementation of successful self-certification processes

Violations of operator certification requirements and OSLs were high, although OSL violations declined compared to 2001. Some Regions have their own definition of an OSL and are interpreting OSL violations

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based upon that definition. The work of the Operating Limit Definition Task Force, in conjunction with the development of the *Operate Within Limits* reliability standard, will result in more consistent and credible reporting of these violations. The following section takes a closer, qualitative look at the performance of these two compliance measures. Performance summaries for additional planning and operating compliance measures are contained in Appendix D.

### **Operator Certification Requirements**

The measure that assesses compliance with operator certification requirements saw the most violations during 2002. Two Regions reported 182 out of the total 193 operator certification violations. One Region reported 41 violations of this measure; 17 more Level 4 violations than 2001. However, five of the 20 members reporting in this Region experienced these violations. The total load for these members is less than 10% of the regional peak load. The second Region reported 141 total violations, with 22 less Level 4 violations. Eight of the 32 control areas in the second Region were non-compliant with the requirements of this measure for all 12 months. Six control areas were non-compliant the first 6 months of the year. Three control areas were non-compliant for nine or ten months.

The reasons expressed by these Regions for the high number of violations are:

- Employee turnover and the difficulty in replacing certified system operators
- Cost and manpower concerns
- Union labor issues
- Staffing problems encountered by small entities

The Region experiencing the highest number of violations plans to include the operator certification measure (P8 T2) in its regional enforcement program in early 2004. It believes this action will help promote and encourage full compliance with this measure.

### **Operating Security Limits**

OSL violations accounted for the second highest number of NERC-wide operating measure violations in 2002. Although the 125 OSL violations in 2002 are significantly less than the 217 experienced in 2001, they still remain high from a reliability standpoint.

One Region reported 104 OSL violations in 2002 versus 33 in 2001, including 30 more Level 4 violations. The following reasons were provided for this poor performance:

- 2002 represented the first full year of reporting under a new, single control area arrangement,
- Market-based mechanisms for congestion relief under such single control area operations cannot always relieve loading within the 30 minute requirement, and
- Regional operating guides and procedures include security criteria that exceed the criteria contained in NERC Policy 2.

The Region expects several on-going efforts to improve performance with this measure, including market design changes related to congestion management, review of equipment ratings and limits, deployment of a state estimator and associated software routines, and construction of additional transmission facilities.

A second Region demonstrated an improvement in the number of OSL violations over 2001. There were 20 violations experienced versus 175 the previous year; this reflects 32 fewer Level 4 violations. The Region cites several contributing factors for the reduction in violations:

- Improved path monitoring,

- Improved member response to a monetary sanctioning process,
- Training advancement, and
- Increased transmission capacity due to the addition of transmission or Special Protection Systems (SPSs).

A review of the 20 reported OSL violations found that:

- Twelve of the violations occurred on a path that was going through an up-rating process; all violations exceeded the old limit, but none exceeded the new limit.
- Three of the violations occurred on a thermally limited path; if an outage had occurred during that time, the expected impacts would have been minor overloading on adjacent lines.
- Five violations occurred on paths where the limit was reduced due to simultaneous interaction with other paths or other facility outages; without knowing the exact flows on the other paths and the exact system conditions at the time, potential system impacts could not be assessed.
  - Two violations occurred on stability-limited paths; these events did not violate the NERC standard but did exceed the regional 20-minute requirement.
  - Three violations were returned to within established thermal limits within 38 minutes.

Appendix E summarizes Regional planning and operating performance statistics. Additional statistical information is provided in Appendix F.

## Recommendations

The following recommendations were derived from the 2002 CEP. These recommendations will be considered and implemented where appropriate to further improve the Compliance Enforcement Program.

1. The Regions should continue to rigorously validate the quality, accuracy, and completeness of self-certification submittals. NERC and the compliance committees should evaluate, on an ongoing basis, the adequacy of regional validation processes. This evaluation should focus on the strategies, methods, scope, and experiences of such validation processes.
2. Some Regions already have exception reporting verification mechanisms in place; however, NERC should craft guidelines to assist the Regions in developing, reevaluating, and implementing appropriate exception reporting processes. The Board of Trustees requested that each Region develop a verification mechanism for reporting OSL violations within their respective compliance programs. These reporting mechanisms should be in place once a uniform definition of an OSL violation is approved and included in the proposed reliability standard: *Operate Within Limits*.
3. The compliance committees should discuss and recommend strategies to resolve the lack of non-member entity participation in the CEP. Although improved participation was noted in 2002, there is still non-compliance associated with entities that are not a member of the Region in which they are located (or any Region for that matter). This represents a significant shortcoming of the program that may only be fully addressed by the enactment of legislation that would make compliance with NERC reliability standards mandatory for all entities that operate at the bulk electric level.
4. The CEP does not have the ability to levy actual sanctions against entities that do not comply with CEP measures, and it is difficult to accurately assess the impact of simulated sanctions and determine whether they are sufficient to ensure compliance with reliability standards. However, some experience has been gained in Regions with a contract based compliance enforcement program. The experience

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gained from these programs should be factored into the sanction matrix that the Enforcement Matrix Self-Directed Work Team (EMSDWT) is refining.

5. All Regions should continue to evaluate the benefits of hosting an annual compliance workshop. These workshops have demonstrated the benefits of communicating the status of the compliance programs, the reliability standards development process, and any structural changes within the industry that may affect the compliance program. These workshops also facilitate the exchange of ideas and experiences between the Region's members. When the 2003 workshops are completed, the regional compliance managers should share their experiences with one another.
6. The compliance committees should continue to actively participate in the transition from the NERC operating policies and planning standards to reliability standards. This includes participating in the teams drafting new reliability standards, particularly the compliance portions of these standards. The compliance committees should also work with NERC's Standards Process Manager to develop a process to ensure effective compliance input into the standards development process.
7. The CSSDWT should review and expand NERC's standardized practices for interpreting and reporting annual compliance performance statistics for 2003 program measures. In addition, the CSSDWT should review any anomalies identified in the 2002 compliance statistics and develop appropriate recommendations.
8. The CMC should develop a reporting process to obtain current regional CEP performance throughout the year. The CMC should review this performance on a regular basis to assess the potential for adverse impacts on the bulk electric system. This process will help the compliance committees identify areas requiring immediate attention and improvement. It will also serve as the basis for reporting on the level of compliance with NERC reliability standards at each Board of Trustees meeting.

## Other NERC Compliance Enforcement Program Activities

### Transmission Loading Relief (TLR) Investigations

An integral part of the Compliance Enforcement Program is the investigation of transmission loading relief (TLR) procedures, which are implemented by NERC reliability coordinators in accordance with Policy 9. The Operating Committee has requested that NERC compliance staff conduct routine investigations of significant events, such as TLR Level 5. The NERC compliance staff investigated several events that occurred in 2002. These investigations identified lessons learned, assessed reliability impacts, and evaluated fairness in implementation. These reports are posted at <http://www.nerc.com/~comply/>.

### Reliability Coordinator Audits

NERC completed audits of all reliability coordinators, as directed by the NERC Board of Trustees. The audits found that all the reliability coordinators are taking the necessary actions to preserve the reliability of the grid first. All reliability coordinators were in compliance with the NERC Reliability Coordinator Standards of Conduct. In addition, they were found to be acting independently of any market interest. The final audit reports can be found on the NERC web site under compliance.

The audits identified a number of issues that need to be addressed. The Operating Committee formed the Reliability Plans Task Force with membership from the Operating Reliability Subcommittee, the compliance committees, and the Functional Model Review Task Group. The task force will address issues identified by the audits, including the development of reliability plans, clarification of reliability coordinator requirements, and delegation of authority.

### **Regional Compliance Enforcement Program Audits**

The NERC compliance staff conducted randomly chosen audits of FRCC, NPCC, and SPP compliance enforcement programs. The purpose of these audits was to evaluate whether the Regions followed their 2001 implementation plan. The primary objective of the evaluation is to identify those areas of greatest effectiveness and encourage the further development of such practices, and to determine those areas that require improvement, change or enhancement.

These objectives were successfully met in 2002 and the Regions have already implemented some of the recommendations identified during these audits. In 2003, NERC will audit the ERCOT, MAIN, and WECC 2002 compliance programs. These audits will be completed by the end of the second quarter of 2003, which will conclude the initial cycle of regional audits. The CMC will then re-evaluate and modify NERC's audit process as necessary.

### **Certification Activities**

The Personnel Subcommittee expanded the System Operator Certification Program in 2002 to offer NERC credentials in areas of balancing & interchange, transmission, both balancing & interchange and transmission, and reliability coordinator. The expanded program was implemented in September 2002. By December, 132 individuals had taken one of the four new examinations. The Operating Committee has formed a task force to evaluate the System Operator Certification Program, and to consider whether NERC should establish a continuing education program.

Before compliance with the NERC Functional Model and new reliability standards can be implemented, NERC must identify and certify those entities that currently perform reliability functions that are presently the responsibility of control areas. To address this, four standard authorization requests that would establish requirements for certification under the Functional Model have been developed and posted for comments. They are: reliability authority, balancing authority, interchange authority, and transmission operator. These proposed certification standards are expected to be approved by the industry at the end of 2003.

# 2002 NERC Compliance Enforcement Program

## Appendix A

### 2002 Program Results

#### PLANNING MEASURES

Measurement	Monitored By	Compliance Calculation Method	In Full Compliance	Total Violations	Compliance Percentage	Level 1		Level 2		Level 3		Level 4 #	Level 4 # non submittal	Level 4 \$
						#	\$	#	\$	#	\$			
I.A.S1.M1	Regions	ANNUALLY	184	11	94.4%			3					8	16056
I.A.S2.M2	Regions	ANNUALLY	183	12	93.8%			4					8	16056
I.A.S4.M4	Regions	ANNUALLY	160	18	89.9%	11							7	14056
I.F.S2.M4	Regions	ANNUALLY		5									5	16000
II.A.S1.M5	NERC (MMWG)	ANNUALLY	8	0	100.0%									
II.A.S1.M6	NERC (MMWG)	ANNUALLY	6	2	75.0%							2		4000
III.D.S1.M2	Regions	ANNUALLY	162	44	78.6%	31						3	10	22056
III.D.S1.M4	Regions	OCCURRENCE		2		1							1	
III.E.S1.M5	Regions	OCCURRENCE		2		1							1	
III.F.S1-S3.M3	NERC	ANNUALLY	9	1	90.0%	0						1		2000
<b>Sub Total</b>			712	97	89.0%	44	0	7	0	0	0	6	40	90224

#### OPERATING MEASURES

Measurement	Monitored By	Compliance Calculation Method	In Full Compliance	Total Violations	Compliance Percentage	Level 1		Level 2		Level 3		Level 4 #	Level 4 # non submittal	Level 4 \$
						#	\$	#	\$	#	\$			
P1 T1	Regions	MONTHLY	3233	25	99.2%	21	3000	3	3084			1		2053
P1 T2	Regions	QUARTERLY	321	8	97.6%	1		3		1		3		7066
P2 T1	Regions	ANNUALLY	164	11	93.7%	1		1				1	8	19274
P2 T2	Regions	OCCURRENCE		125		7	36000	22	264000	38	563200	58		1320800
P3 T2	Regions	OCCURRENCE		0										
P3 T3	Regions	OCCURRENCE		0										
P4 T1	Regions	ANNUALLY	179	8	95.7%	0		2					6	12056
P4 T2	Regions	ANNUALLY	174	10	94.6%	0						3	7	21404
P4 T3	Regions	ANNUALLY	19	0	100.0%									
P5 T1	Regions	OCCURRENCE		1		1								
P6 T1	Regions	ANNUALLY	175	15	92.1%	2				1	1000	5	7	26814
P6 T2	Regions	ANNUALLY	166	27	86.0%	10		7				2	8	23094
P8 T1	Regions	ANNUALLY	169	12	93.4%	1		1		1	1000	2	7	23094
P8 T2	Regions	MONTHLY	1713	193	89.9%	8	16000	6	24000	7	41044	172		6197182
P9 T1	Regions	OCCURRENCE		8		7	360000			1	80000			
P9 T2	Regions	OCCURRENCE		0										
P9 T4	Regions	OCCURRENCE		1								1		
<b>Sub Total</b>			6313	444	95.3%	59	415000	45	291084	49	686244	248	43	7652837

<b>TOTAL</b>		Total \$ Sanctioned \$9.1M		541		103	415000	52	291084	49	686244	254	83	7743061
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Appendix B

*Planning Standard Measures/Templates*

<b>Planning Template</b>	<b>Brief Description of Measure</b>	<b>Monitoring Responsibility</b>	<b>Applies To</b>
I A S1 M1	System performance under normal conditions with reporting requirements	Regions	Members
I A S2 M2	System performance under single contingency with reporting requirements	Regions	Members
I A S4 M4	System performance under extreme contingency conditions	Regions	Members
I F S2 M4	Recorded fault and disturbance data	Regions	Members
II A S1 M5	Develop and maintain a library of steady state models	NERC/MMWG	Regions
II A S1 M6	Develop and maintain a library of dynamics models	NERC/MMWG	Regions
III D S1 M2	Consistency of entities with Regional UFLS program	Regions	Members
III D S1 M4	Analyze and document Regional UFLS program performance	Regions	Members
III E S1 M5	Analysis and documentation of UVLS event	Regions	Members
III F S1-S3 M3	Regional assessment of SPS effectiveness	NERC	Regions

*Operating Policy Measures/Templates*

<b>Operating Template</b>	<b>Brief Description of Measure</b>	<b>Monitoring Responsibility</b>	<b>Applies To</b>
P1 T1 (OS 1)	Control Performance Standard CPS-1 and CPS-2	Regions	Member Entities
P1 T2 (OS 2)	Disturbance Control Standard	Regions	Member Entities
P2 T1	Formal policies and procedures to address the execution and coordination of activities that affect transmission system security	Regions	Member Entities
P2 T2	Operating Security Limit Violation 30 minute return	Regions	Member Entities
P3 T2	Interchange Schedules only be implemented between adjacent Control Areas	Regions	Member Entities
P3 T3	Tags input into the IDC or provided to Reliability Authority	Regions	Member Entities
P4 T1	Adequate facilities for the system operators to monitor specific system parameters	Regions	Member Entities
P4 T2	CA and Operating Authority to provide system data to Reliability Authority	Regions	Member Entities
P4 T3	Reliability Authority to exchange system data	Regions	Member Entities
P5 T1 (OS 5 and 6)	Operators must implement and communicate emergency plans	Regions	Member Entities
P6 T1 (OS-3)	Emergency Operation Plans developed and maintained	Regions	Member Entities
P6 T2	System Restoration Plans	Regions	Member Entities
P8 T1	System Operator Authority	Regions	Member Entities

*Operating Policy Measures/Templates*

*(continued)*

<b>Operating Template</b>	<b>Brief Description of Measure</b>	<b>Monitoring Responsibility</b>	<b>Applies To</b>
P8 T2	Operator Certification	Regions	Member Entities
P9 T1	Reliability Authority to perform next day study	Regions	Member Entities
P9 T2	Reliability Authority to take actions requested by other Reliability Authorities	Regions	Member Entities
P9 T4	Issuance of Energy Emergency Alerts	Regions	Member Entities

### *Additional Performance Summaries*

#### System Restoration Plans

The System Restoration Plans compliance measure experienced the third highest number of operating violations in 2002, although compliance improved over 2001. In 2002, 27 violations were reported versus 58 the previous year, including eight fewer Level 4 violations. The main reason for the ten Level 1 violations reported was the lack of documentation regarding operator training in the implementation of the restoration plan.

#### CPS1 and CPS2

There were 25 violations observed for measure P1 T1, mainly CPS 2 violations at Level 1. One Region reported that many of these violations just missed full compliance by a few hundredths in the calculation. Two Regions cited equipment performance issues contributing to the violations observed.

#### Consistency with Regional Underfrequency Load Shedding (UFLS) Program

Planning Measure III D M2 addresses consistency with regional underfrequency load shedding programs. This measure was last monitored in 2000, and experienced the highest number of NERC-wide planning violations in 2002. The template was revised after 2000 to include only two levels of non-compliance, Level 1 and Level 4. Recognizing these changes, some improvement is noted in 2002 performance. There were 44 violations reported, three at Level 4. Some Regions reported the following:

- The regional requirement for automatic load restoration to prevent frequency overshoot is not fully met.
- Automatic load restoration begins at a slightly lower frequency than identified in the Regional plan.
- As a result of load growth, load blocks no longer comply with the regional plan.
- Due to a recent merger, a system no longer meets the requirements of the regional plan.

One Region reported that compliance is measured in an actual field survey of load behind each underfrequency load-shedding relay during a specified period of time. This Region had twelve Level 1 and four Level 4 violations: two of its members have virtually no active underfrequency load shedding program and two failed to report the results of the field survey. These four members represent less than 10% the regional peak load. Two of the four entities have an active construction plan underway to bring them into compliance. The Region monitored this measure in the 2001 CEP and cited a performance improvement in 2002.

#### Extreme Contingency Studies

The System Performance Under Extreme Contingencies measure experienced the second highest number of planning violations. The 18 violations reported for extreme contingency studies occurred within one Region. Seven of the 18 violations were due to a failure to submit the required self-certification form. Eleven regional members reported Level 1 noncompliance, which is the only level of noncompliance identified for extreme contingency studies. Some of the reasons noted for the reported non-compliance are:

- Historically, such studies were not conducted.
- Studies are conducted on an 'as needed basis.'
- Studies are conducted, but are unavailable due to company reorganization.
- Only 230kV system studied in coordination with other systems.
- Portions of the system were omitted due to a recent merger.

Many of these members are planning to conduct such studies in the near future.

### Normal and Single Contingency Studies

Measures of system performance studies under normal conditions and under single contingencies experienced violations of longer-term study requirements. Sixteen of the 23 violations of these measures were Level 4 non-submittals of the required self-certification forms. In a couple of instances, these non-submittals were due to a company resource problem that has since been resolved.

### Tagging

In 2002, tagging measure P3T3 was revised to only report violations that result from schedules implemented between non-adjacent control areas. This reporting change resulted in zero actual violations of this measure. In 2001, there were 243 violations associated with tagging service availability and percentage of tags actively processed.

NERC 2002 Compliance Enforcement Program

Regional Compliance Performance

NERC 2002 Compliance Enforcement Program <sup>(1)</sup>							
REGION	Measure Type	Level 1	Level 2	Level 3	Level 4	Level 4 Non-submittals	% Compliance
ECAR	Planning	2	0	0	0	2	96
	Operating	10	0	0	3	0	98
ERCOT	Planning	0	0	0	0	0	100
	Operating	6-----0	21-----0	32-----0	45-----0	0	100
FRCC	Planning	0	0	0	0	0	100
	Operating	1	0	2	2	0	99
MAAC	Planning	0	0	0	0	0	100
	Operating	0	0	0	0	0	100
MAIN	Planning	0	0	0	1	0	98
	Operating	6	1	0	1	0	99
MAPP	Planning	2-----5	0	0	1	2-----1	95
	Operating	2	2	1	8	1	98
NPCC	Planning	0	0	0	1	0	96
	Operating	0	0	0	2-----0	0	100
SERC	Planning	2	0	0	0	5-----0	98
	Operating	1-----4	1	0	1	0	99
SPP	Planning	12	0	0	2	2	81
	Operating	6-----3	4	1-----4	39	1	93
WECC	Planning	21	7	0	1	28	73
	Operating	2-----18	1-----15	6-----3	12---135	41	86
NERC Totals	Planning	2-----42	7	0	6	7-----33	89
	Operating	15-----44	22---23	39---10	59---189	43	95
	Total	17-----86	22---30	39---10	59---195	7-----76	94.7
<b>TOTALS</b>		<b>103</b>	<b>52</b>	<b>49</b>	<b>254</b>	<b>83</b>	<b>94.7</b>

Notes: Violations presented as follows:

L# --- R#
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Number on the right (R#) represents the # of violations included in the % compliance performance index.

## 2002 NERC Compliance Enforcement Program

Number on the left (L#) represents the # of violations reported by occurrence, and excluded from the % compliance calculation.

### Appendix F

REGION	MEASURE									
	P1 T1		P2 T2		P6 T1		P6 T2		P8 T2	
	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002
ECAR	11	9	6	0	3	0	9	1	2	3
ERCOT	12	0	33	104	1	0	0	0	0	0
FRCC	0	0	0	0	1	0	0	1	4	3
MAAC	0	0	0	0	0	0	0	0	0	0
MAIN	2	6	0	0	0	0	4	0	6	0
MAPP	0	0	0	0	0	3	1	2	6	5
NPCC	0	0	1	1	0	0	0	0	1	0
SERC	8	1	1	0	1	0	3	2	0	0
SPP	1	0	1	0	8	3	13	3	21	41
WECC	9	9	175	20	24	9	28	18	152	141
<b>TOTAL</b>	<b>43</b>	<b>25</b>	<b>217</b>	<b>125</b>	<b>38</b>	<b>15</b>	<b>58</b>	<b>27</b>	<b>192</b>	<b>193</b>

### *2002 Operating Measure Performance Comparison*

**2002 NERC Compliance Enforcement Program**

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**2002 P1 T1 Regional Performance Comparison**

REGION	LEVEL OF VIOLATION									
	Level 1		Level 2		Level 3		Level 4		Level 4 Non-Submittal	
	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002
ECAR	10	9	1							
ERCOT	8				1		1		2	
FRCC										
MAAC										
MAIN		6	2							
MAPP										
NPCC										
SERC	6	1	1				1			
SPP	1									
WECC	6	5	2	3	1			1		
<b>TOTAL</b>	<b>31</b>	<b>21</b>	<b>6</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>0</b>

**2002 P2 T2 Regional Performance Comparison**

REGION	LEVEL OF VIOLATION									
	Level 1		Level 2		Level 3		Level 4		Level 4 Non-Submittal	
	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002
ECAR			1		1		1		3	
ERCOT	2	6	8	21	8	32	15	45		
FRCC										
MAAC										
MAIN										
MAPP										
NPCC							1	1		
SERC							1			
SPP					1					
WECC	15	1	5	1	111	6	44	12		
<b>TOTAL</b>	<b>17</b>	<b>7</b>	<b>14</b>	<b>22</b>	<b>121</b>	<b>38</b>	<b>62</b>	<b>58</b>	<b>3</b>	<b>0</b>

**2002 NERC Compliance Enforcement Program**

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**2002 P6 T1 Regional Performance Comparison**

REGION	LEVEL OF VIOLATION									
	Level 1		Level 2		Level 3		Level 4		Level 4 Non-Submittal	
	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002
ECAR									3	
ERCOT									1	
FRCC			1							
MAAC										
MAIN										
MAPP								3		
NPCC										
SERC							1			
SPP		2	3			1	4		1	
WECC	2		1		1		4	2	16	7
<b>TOTAL</b>	<b>2</b>	<b>2</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>9</b>	<b>5</b>	<b>21</b>	<b>7</b>

**2002 P6 T2 Regional Performance Comparison**

REGION	LEVEL OF VIOLATION									
	Level 1		Level 2		Level 3		Level 4		Level 4 Non-Submittal	
	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002
ECAR	3	1			1		1		4	
ERCOT										
FRCC		1								
MAAC										
MAIN			3				1			
MAPP	1			1						1
NPCC										
SERC	1	2					2			
SPP	3		4	2	3		2	1	1	
WECC	5	6	2	4	1		4	1	16	7
<b>TOTAL</b>	<b>13</b>	<b>10</b>	<b>9</b>	<b>7</b>	<b>5</b>	<b>0</b>	<b>10</b>	<b>2</b>	<b>21</b>	<b>8</b>

**2002 P8 T2 Regional Performance Comparison**

REGION	LEVEL OF VIOLATION									
	Level 1		Level 2		Level 3		Level 4		Level 4 Non-Submittal	
	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002
ECAR							2	3		
ERCOT										
FRCC			2			2	2	1		
MAAC										
MAIN							6			
MAPP		1					6	4		
NPCC							1			
SERC										
SPP						3	21	38		
WECC		7	1	6	3	2	148	126		
<b>TOTAL</b>		<b>8</b>	<b>3</b>	<b>6</b>	<b>3</b>	<b>7</b>	<b>186</b>	<b>172</b>	<b>0</b>	<b>0</b>

**2002 CEP Planning Measure Performance Comparison**

REGION	MEASURE							
	I A M1		I A M2		I A M4		III D M2	
	2001	2002	2001	2002	2000	2002	2000	2002
ECAR		1		1	1		3	2
ERCOT	1		1		1			
FRCC								
MAAC								
MAIN	1		1		1		1	
MAPP							5	6
NPCC								
SERC					2		3	2
SPP	1		1				13	16
WECC	17	10	22	11	33	18	27	18
<b>TOTAL</b>	<b>20</b>	<b>11</b>	<b>25</b>	<b>12</b>	<b>38</b>	<b>18</b>	<b>52</b>	<b>44</b>

**2002 IA M1 Regional Performance Comparison**

REGION	LEVEL OF VIOLATION									
	Level 1		Level 2		Level 3		Level 4		Level 4 Non-Submittal	
	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002
ECAR										1
ERCOT							1			
FRCC										
MAAC										
MAIN							1			
MAPP										
NPCC										
SERC										
SPP									1	
WECC			3	3					14	7
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>15</b>	<b>8</b>

**2002 IA M2 Regional Performance Comparison**

REGION	LEVEL OF VIOLATION									
	Level 1		Level 2		Level 3		Level 4		Level 4 Non-Submittal	
	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002
ECAR										1
ERCOT							1			
FRCC										
MAAC										
MAIN							1			
MAPP										
NPCC										
SERC										
SPP									1	
WECC			6	4			2		14	7
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>15</b>	<b>8</b>

**2002 IA M4 Regional Performance Comparison**

REGION	LEVEL OF VIOLATION									
	Level 1		Level 2		Level 3		Level 4		Level 4 Non-Submittal	
	2000	2002	2000	2002	2000	2002	2000	2002	2000	2002
ECAR					1					
ERCOT	1									
FRCC										
MAAC										
MAIN							1			
MAPP										
NPCC										
SERC							2			
SPP										
WECC	5	11	4		2		4		18	7
<b>TOTAL</b>	<b>6</b>	<b>11</b>	<b>4</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>18</b>	<b>7</b>

**2002 IID M2 Regional Performance Comparison**

REGION	LEVEL OF VIOLATION									
	Level 1		Level 2		Level 3		Level 4		Level 4 Non-Submittal	
	2000	2002	2000	2002	2000	2002	2000	2002	2000	2002
ECAR	2	2	1							
ERCOT										
FRCC										
MAAC										
MAIN							1			
MAPP		5	1		1		3			1
NPCC										
SERC	2	2					1			
SPP	3	12	6		1		3	2		2
WECC	3	10	4		1		1	1	18	7
<b>TOTAL</b>	<b>10</b>	<b>31</b>	<b>12</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>9</b>	<b>3</b>	<b>18</b>	<b>10</b>

### *General Program Comments*

The following are general program comments received from the Regions:

- The appropriateness of penalty multiplying factors in the sanction matrix should be reconsidered.
- The OSL definition requires clarity to promote a consistent interpretation of what constitutes a limit and violation of that limit.
- Operating templates need to be updated. Multiple measures in an operating template require interpretation as to the applicability to each entity.
- On-site reviews should be conducted during the same year to place all regional members on a level playing field.
- Operating policies need to be rewritten and focused on those areas necessary for maintaining reliability.
- NERC should only establish standards for those conditions where non-compliance poses a direct threat to interconnected bulk power system reliability.
- NERC standards should be broad-based so that they can be tailored to meet regional characteristics.
- Regional coordination needs to be established for auditing entities that span regional boundaries to avoid duplication of effort.
- The NERC Compliance Manual will provide needed process and procedure documentation, and should undergo 'due process'.
- An entity that is assessed a violation for non-compliance should be allowed to mitigate the problem before a sanction is applied.
- A coordinated CEP needs to be in place prior to addressing compliance with individual measures.
- With the unbundling of utilities into various operating functions, it is becoming more difficult to identify roles, responsibilities, and accountability of market participants.
- The role of RTO's membership in the Region is uncertain and unclear.
- One Region believes that it must develop a regional program beyond what is planned for NERC. Since the Region is a control area, reliability coordinator, balancing authority, and transmission operator, it depends upon other entities to achieve satisfactory operating performance. Some NERC measures do not reach these entities.
- It may be difficult to administer compliance reviews for measures that require a contractual agreement between two parties that are not in the same Region, if the Region or NERC is not specifically named in the agreement.
- Some parties being assessed indicated that the amount of data requested is burdensome.
- There is confusion about the future of NERC's reliability standards development process and the continuation of the current CEP.
- An entity asks if wording from the NERC compliance measures needs to be quoted in the entity's documentation.