

Status Report

Recommendation 6a. Improve Operator and Reliability Coordinator Training

October 3, 2004

Background

NERC found during its investigation of the August 14, 2003 blackout, that some reliability coordinators, and control area operators had not received adequate training in recognizing and responding to system emergencies. Most notable was the lack of realistic simulations and drills for training and verifying the capabilities of operating personnel. This training deficiency contributed to the lack of situational awareness, and failure to declare an emergency when operator intervention was still possible prior to the high-speed portion of the sequence of events.

As a result, the NERC Board of Trustees approved Recommendation 6a requiring all reliability coordinators, control areas, and transmission operators to provide at least five days per year of training and drills in system emergencies, using realistic simulations, for each staff person with responsibility for the real-time operation or reliability monitoring of the bulk electric system. This system emergency training is in addition to other training requirements. Five days of system emergency training and drills are to be completed prior to June 30, 2004, with credit given for documented training already completed since July 1, 2003.

This report provides the status of operating entity emergency training across the regions in NERC, as of June 30, 2004.

NERC Status as of June 30, 2004

The CCMC requested each regional compliance manager to provide the training status, as of June 30, 2004, of the operating entities (reliability coordinators, control areas, and transmission operators) in their respective region in meeting the requirements of Recommendation 6a. The regional compliance managers simply used five days of training as the basis to determine whether the training requirements were met. The compliance committees are now discussing the need to further refine the five-day definition to be a minimum number of contact training hours. This new definition, which will be applied in the NERC annual compliance program, will provide clarity and promote consistency with all operating entities across the regions. However, it should be noted that the statistics provided in this report would not substantially change if such a definition were in place.

Table 1 summarizes the number of operating entities, by region, that have less than five days of emergency training as of June 30, 2004. Table 2 lists the total number of control areas, the control areas that did not meet the requirement, the corresponding number of individual operators, and the total number of operators per region as available.

The tables indicate:

- All operating entities in three regions met the requirements of the recommendation
- All reliability coordinators, in all regions, met the required training
- 70% of all control areas met the requirement

- 89% of all individual operators have completed the training requirements; based upon available data provided by seven of the ten regions
- 42 operating entities in NERC did not complete the required training
- Approximately 244 individual control area operators did not complete the required training

No region indicated any significant affect on bulk power system reliability as a result of not meeting the required training. With a few exceptions, each region stated that all operators not meeting the June 30, 2004 requirement would complete the required training by December 31, 2004.

Regional Status

ECAR — Reports that there were four control areas that did not complete the five days of emergency training for all its operators. Eight operators in one control area completed between 21 and 32 hours of training. In three control areas, no operators achieved the five-day requirement; only about 20% of the required training was completed. ECAR expects, with concurrence from the companies, that all operators in the four control areas will satisfy the five-day requirement by December 31, 2004.

ECAR believes there is no significant impact on reliability as a result of these four control areas not completing the training by June 30, 2004. In each case, these companies have completed some level of training and have elevated the awareness and the importance of the new training requirements. The companies' individual load ranges from 2% to 6% of ECAR's Average Annual Load per Hour, which is a very small load relative to the entire region. In each case, none of these entities were directly involved in the 2003 blackout.

ERCOT — Reported that all operating entities met the requirement.

FRCC — There was one Transmission Operator (three of seven individual operators) in FRCC, representing less than 1% of the regional load with no reliability impact, which did not complete the five days of required training. There are a total of 120 operators in the FRCC region that are required to complete the emergency training.

MAAC — Reported that all operating entities met the requirement.

MAIN — Reported that there were four control areas that did not complete the five days of emergency training. One operator from one control area, two operators in another control area, and three operators in two combined control areas did not meet the requirement. MAIN believes these entities did not significantly affect the reliability of the system for the following reasons: Three control areas have less than 1% of the peak regional load, and one control area is approximately 4% of the peak regional load. One control area has now completed the required training. Ninety percent of the training

requirement has been met in the 4% peak load control area. As of June 30, 2004, 96% of all operators in the region have met the training requirements.

MAPP — Reported that three control areas did not meet the requirement. One control area completed 98% of the requirement, with one operator missing 6 of the 40 hours due to a severe illness. Two control areas completed about 75% of the requirement. These control areas are small entities that had difficulty arranging for 40 additional hours "over and above the normal training" schedule. None of the MAPP control areas that did not meet the training requirement were judged to have any significant effect on system reliability.

NPCC — Reported that all operating entities met the requirement.

SERC — Reported that 16 out of 302 operators (~5%) in the SERC region did not complete the five days of required emergency training. This affects 4 of 21 control Areas. SERC indicated that completion of mitigation plans range from August 30th to December 31st. These situations have been reviewed by the SERC Compliance Subcommittee and determined to not be significant. These operating entities are all small entities (~600 to 3600MW). All training scheduled to be completed by December 31, 2004.

SPP — Reported that 11 of the 17 Control Areas in the SPP region (46 operators out of 175 in all SPP control areas) did not complete the five day requirement. All Control Areas will complete the required training between July 31 and December 31, 2004. Eight of these 11 control areas contribute approximately 2% each of the 2003 SPP peak load. The remaining three control areas, in aggregate, represent 35% of the 2003 SPP peak load. These three larger control areas reported that 10 operators, or 6% of all SPP control area operators, did not meet the training requirement. SPP does not believe the incomplete status of this requirement posed a significant risk to the reliability of the bulk electric system.

WECC — Reported that all reliability coordinators completed the emergency training recommendations. Fifteen of the 34 control areas have not fully achieved the recommended training. Of these 15 control areas, seven reported that none of their operators received the training. These seven control areas comprise approximately 11.3% of the total WECC load. Four of these control areas indicated they would not complete the training by the end of 2004; with one indicating completion by March 31, 2005, two by June 30, 2005, and one by December 31, 2005. Three of these control areas did not indicate any date.

Most of the remaining eight control areas indicated that only a few of the total number of their operators have not received the training. Two of these control areas completed the recommended training by July 9, 2004, two control areas indicated completion by September 30, 2004, and four control areas indicated completion by December 31, 2004.

Table 1

**Number of Reported Operating Entities not Meeting the System
Emergency Training Requirement**

Region	Reliability Coordinator	Control Area	Transmission Operator
ECAR		4	
ERCOT			
FRCC			1
MAAC			
MAIN		4	
MAPP		3	
NPCC			
SERC		4	
SPP		11	
WECC		15	
Subtotal	0	41	1
TOTAL			42 Operating Entities

Table 2

**Number of Control Areas and Operators not Meeting the System
Emergency Training Requirement**

Region	Total Control Areas	Control Areas Not Meeting the Recommendation	Control Area Operators Not Meeting the Recommendation	Total Number of Control Area and Reliability Coordinator Operators
ECAR	20	4	52	
ERCOT	1	0	0	190
FRCC	11	0	0	120
MAAC	1	0	0	53
MAIN	14	4	6	128
MAPP	13	3	6*	
NPCC	5	0	0	249
SERC	21	4	16	
SPP	17	11	46	191
WECC	34	15	118	584
Subtotal	137	41	244	1515**

* MAPP is identifying the number of operators in one control area that did not meet the training requirement

** Total number of operators based upon available data provided by seven of ten regions