



# NORTH AMERICAN ELECTRIC RELIABILITY COUNCIL

Princeton Forrestal Village, 116-390 Village Boulevard, Princeton, New Jersey 08540-5731

## Distribution Factor Task Force

June 2, 1998  
Sheraton Gateway Suites  
Chicago, Illinois

### Meeting Minutes

#### Attendance

Madison Long, Chairman	SERC	Greg Campoli	NPCC
Greg Krajnik	MAAC	William Tiller	SERC
Thomas Vitez	ECAR	Chi Tang	Canada
Roberto Paliza	MAIN	Brian M. Nolan	NERC
Patrick Shanahan	MAIN		

#### Administrative Matters

The Distribution Factor Task Force (DFTF) meeting was called to order on June 2, 1998 at 10 a.m. by Chairman Madison Long.

The May 5–6, 1998 meeting minutes were approved with modifications.

#### Book of Flowgates

##### Flowgate Definitions

By July 10, 1998, Regional representatives are to review its own list of flowgates that are candidates for normalization. The flowgates that are candidates include flowgates that have three or more elements. For the first cut the Regional representatives should look at the noncontrol area-to-control area flowgates.

Flowgates can be defined for both directions. This should not significantly increase the number of flowgates, since some Regions are removing the control area-to-control area flowgates.

The internal flowgate will be removed and informational will be added to the flowgate definitions. The last line of the internal flowgate will be used to define this.

Normalization of multi-element flowgates was discussed. The flowgates that contain more than two elements, and is thermally limited, may be normalized. The Regional representatives are to come to the August meeting prepared to further discuss this issue. Regional representatives should prepare a few different methods for handling the multi-facility flowgate. This will be listed as under review.

Reflecting is a new term for the process of correlating needed relief for a TLR condition to the actual TLR requested on a defined flowgate. TLR may be called for a potential contingency condition

that may overload a limiting facility. The contingency need not actually occur, but would cause severe loading should it occur. If TLR is requested, the post-contingency relief utilizing OTDFs must be “reflected” to the precontingency flowgate relief utilizing PTDFs. Pat will develop an example of a reflecting of limits to be included with the example that is included with the current example that is in the Flowgate Definition document.

Pat Shanahan disagrees with including the ratings example as listed in the Flowgate Definition document because it is an IDC issue and is beyond the scope of the iIDC.

### **Contingency Flowgate**

Pat submitted a trial list of three contingency flowgates (FGs). These FGs would contain specific pairs of contingency and monitored facilities. Rather than monitor the pre-contingency sensitivities on both the contingency and monitor element, these FGs would simulate the desired contingency and the sensitivity would reflect the monitored element flow. The sensitivities for these FGs would be similar to OTDFs. Pat referred to their sensitivities as “contingency PTDFs” since they represent a PTDF for a contingency condition.

The contingency PTDF would need to be extracted in a slightly different fashion than the usual PTDFs. Chi indicated that this is not a significant problem. Once extracted, the “contingency FGs” can be loaded into the iIDC and PTDF viewer in the same fashion currently used. The tested contingencies in the contingency FGs are independent of the other FGs.

Pat provided rationale for requesting use of contingency FGs. More frequent matrix updates, such as on-demand updates, produce more accurate PTDFs but they do not eliminate the need for OTDFs. For actual outages, an on-demand calculation can update PTDFs for a contingency, similar to an OTDF or PTDF. However, many requests for TLR are for a screened hypothetical contingency condition that would overload a limiting facility. It would be inappropriate to update the PTDFs for all FGs based on a hypothetical contingency. At the same time, PTDFs may not be considered an adequate substitute for the need for OTDFs. The use of contingency FGs is an attempt to fill this need for OTDF, however, contingency FGs do not address many of the expectations for OTDFs discussed for the future IDC. The use of OTDFs is already a part of the “reflecting” process of TLR.

Pat noted that a contingency FG would produce a smaller sensitive than a similar FG monitoring the pre-contingency sensitivity on both the contingency and limiting facility elements. For this reason, the current 5% cutoff would limit the use of contingency FG containing lower voltage (less sensitive) facilities. This would limit the number of contingency FGs submitted. In addition, contingency FGs could be generally limited to historically identified conditions to keep the number of FGs within its current range.

This will be revisited at the August meeting. Pat will write up some information on this topic and distribute it to the working group.

### **PARs**

The original intent of the PAR model was that they would be free flowing, under the TLR procedures the transactions would be reduced, and the phase angle regulators would not be moved.

After a TLR was called for, the relief that was anticipated was not attained. There was concern that entities were moving the tap settings. After review of the PARs it was determined that they were not changed. It was determined that the mix of the capacity and the transactions that were going on added to the problems, even with the cutting of transactions. Unless there is a problem in an area the PARs are not moved. GAPP has a list of all of the PAR settings.

A review needs to be done, by OH etc., to determine if the requested reduction in transactions occurred. Also, the review should check to see if any transactions were added that would have aggravated the situation.

A matrix of the PAR settings would be helpful. The DFTF previously requested that this be included in the IDC.

### **Update on PTDF Base Case**

The MMWG control area numbering may have changed from the past series of base cases to the current series. The renumbering of the model will cause a lot of work to map the flowgates. William Tiller will compare the 1998 summer base case to the 1998 winter base case. This will give DFTF an idea of the magnitude of work to map the flowgates.

Chi has done a lot of work on the MBASE of the base cases. All of the units that had value of 100 or 999 were switched to the P-MAX value. Some Regions sent Chi an IDEV file to correct the MBASE values.

Greg Krajnik added a few units to the do not participate list, using the method that Pat Shanahan described at the May 5-6, 1998 meeting. To have a unit participate at its MBASE, a unit must have status ON and an output of greater than 0.0. (i.e.  $> 0.1$ ) Percent participation is the unit MBASE divided by the total MBASE used for a CA. Once the participating units have been prepared for the seasonal case, a unit may be removed from participation by making its MBASE = 0 or making its status OFF. The MBASE method is preferred by Chi and does not effect the case solution.

Greg Campoli requested that DFTF distribute a solvable base case and an IDEV file to change the status and participation factors to alter the base case to create the PTDF values. The starting point for the PTDF values is a solvable MMWG base case. Another option is to distribute a DIFF file that compares the PTDF base case to its reference base case.

The data for NEPOOL has been reviewed and is correct. Also, since NEPOOL is radial to New York the location of the generation does not effect the PTDF values that are created.

With the daily update the MUST program will be used. Currently, the default scaling method for DFTF is to scale generation. Under the MUST system, different systems can use different scaling systems. This will allow one control area to scale generation and another to scale load. Assuming that the program can handle the different scaling methods properly, DFTF has no technical objections. If one area decides to use a method other than the scaling of generation, it should be open to all participants. The scaling of load would be universal across the area that determines to scale load, and not a pick and choose method.

If the daily updates are calculated using different scaling methods, then the monthly updates may switch to the MUST program to allow the differing scaling methods. Alternatively, Pat offered an IPLAN to produce a set of CA load points that could be cut-and-pasted into the substem file.

However, if DFTF proceeds with the alternate scaling method, there needs to be some documentation that will allow others to see how and what DFTF is doing. The level of documentation is yet to be determined. ComEd currently wants to scale load for July and August (summer) months only. ComEd believes that the load scaling would be more representative for the summer season.

DFTF has no technical objections to the use of scaling of load and generation. The IDC will need to review the change in the scaling procedures before DFTF can implement the alternate scaling procedure. Roberto will present the ComEd proposal, to allow scaling of load as well as generation to the

IDC later this month. The scaling option would be open to all control areas. The IDC will request the position that DFTF has on the issue first before making any decisions.

### **Daily Model Update**

When the PTDF update goes to a daily process, what is DFTF responsible for? June 1, 1998 was the first day that the daily data was to be distributed, and to date only one Region has submitted the data. Assuming that the SDX system is up and running by the end of the month, what is DFTF responsible for? Once the daily update process is in place DFTF will still be creating monthly PTDF values for use as a reference, and adjusting the long-term topology changes in the base case for use in the daily process. To ensure that PTDF values are available, DFTF will use the same process that it has for the July PTDF updates. The July outage data should still be sent to Chi, by June 15. DFTF will need to work towards getting the SDX system operational.

DFTF will be using the summer peak base case as its reference point. DFTF will produce a monthly base case that captures the new facilities. The daily updates will use the monthly base cases that DFTF produces as its reference case. Each day that days outages will be applied to the monthly reference case. The daily outage IDEV files will be posted on a secured Internet site at MAIN. MAIN will maintain 30 days of IDEV files on the secured site and then transfer the IDEV files to NERC for storage.

### **Future Meetings**

August 13–14, 1998	Albany, New York	1 to 5 p.m., 8 a.m. to noon
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### **Assignments**

- To model the light load conditions for July, the light load M-BASE needs to be submitted to Chi by June 12, 1998.
- Prior to the next meeting, Regional reps are to develop different methods for normalization of multi-element flowgates.
- By July 10, 1998 Regional representatives are to review their own list of flowgates that are candidates for normalization.
- Someone from the DFTF will send to DFTF the last few months of NERC TLR logs, or the web site where they are posted.
- For the next meeting, the topic of TPF will be covered.
- Mat will get the modeling guidelines from Ben Li and distribute them to the task force. These will need to be updated to include the daily updating process. This and the calculation procedures will be put on the agenda for review and approval at the next meeting.
- All to submit meeting expenses to Brian.

### **Adjournment**

Chairman Long adjourned the meeting at 4 p.m. on June 2, 1998.