



# NORTH AMERICAN ELECTRIC RELIABILITY COUNCIL

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

## Distribution Factor Task Force

May 31–June 1, 2000  
Marriott Atlanta Airport  
Atlanta, Georgia

### Meeting Minutes

#### Attendance

Madison Long, Chairman	VACN	Sharon Palmer	TVA
Jonathan Riley, Vice Chairman	EMSC	Nelson Burks	VACN
Thomas Vitez	MECS	Linda Ponseti	EES
Dave S. Mabry	PJM	Robert Rhodes	SPP
Patrick J. Shanahan	MAIN	Chi Tang	IMO
Julie Pierce	MAPP	Brian M. Nolan	NERC
Greg Campoli	NYISO		

#### Administrative Matters

Chairman Madison Long called the Distribution Factor Task Force (DFTF) meeting to order at 1 p.m. on May 31, 2000. Each representative introduced himself.

The April 25–26, 2000 meeting minutes were approved with modifications. All of the action items from the April 25–26, 2000 meeting were either completed or are in progress.

#### Minutes and Assignments from last meeting

- Brian will check on the status of the IMO contract. There are discussions to ensure that OH is compensated for Chi's time.
- DFTF should review their own area based on Alternative 1 of the per generator method. Done
- Conrado will develop an import program that will read RAWD format. In process
- SC/CA's are to send a RAWD file that includes all of the facilities that they wish to add to the SDX system. Done
- SC/CA's are to add common names to the SDX data file. In process

#### Native Load Contribution to FGs

Pat Shanahan discussed the types of analysis that they are using in MAIN, Cluster Analysis.

The Book of Flowgates data is read, then processed, and the results are stored in an Access database. Generator data is stored in the database; also so joint ownership of data can be accounted for. The use of the larger of PMAX or MBASE or PGEN was discussed. PMAX values from the base case

will be used. The reason for going with PMAX is that some areas have one MW for PGEN. The PMAX values can be scaled based on the values that are received from the SDX data.

This system uses the SDX data to get the transmission outages and load data. Eventually they will try and work the generation outage data also. Some of the flowgates would never have a TLR called on them, but it is just as easy to calculate all of the values instead of just a subset.

For Native Load MUST is calculating the GLDF 1 and 2 values from the load or generation to the base case reference bus. The final GLDF is calculated by subtracting GLDF2 from GLDF1. These values can be scaled to account for less than peak values.

How to incorporate the flowgates on the fly is still an open issue. How to handle the instances of generation being less than the load is also an open issue. If the load exceeds the generation use the PMAX value. If generation exceeds the load value, scale the generation down. It is feasible to look at the net interchange via the tag data.

To have this work for all areas, DFTF will need daily load values. For areas that do not supply daily load values, the peak values in the base case would be used. The values will be calculated daily and posted at a specific time. Pat or SCS will determine this time of the calculation and posting. All data that is submitted at least one hour prior to the calculation will be used. The sum value will be scaled based on the percentage of Peak. The values will be calculated for reliability flowgates, since these are the only flowgates that a TLR can be called on.

The following are the agreed upon items:

1. Calculate GLDF once daily
  - a. Time — this will be the same hour as MAIN uses, which is currently 1 PM CST (2 PM CDT)
  - b. The most recent version of the Book of Flowgates will be looked for and used. This can be done once a week
2. Calculate energy on Reliability flowgates
  - a. Use MUST — pick up SDX outages/derates
  - b. Use PMAX
3. Scale calculated value, (SDX Load/IDC base load), by control area
  - a. SDX load hour
  - b. Default Peak base case load
4. Load and Generation
  - a. If the load exceeds the generation use the PMAX value
  - b. If generation exceeds the load value, scale the generation down
5. Displaying the data
  - a. HTML — simplified and detailed
  - b. Posted on the MAIN web site and password protected
  - c. Eventually it could be moved to the NERC web site, if desired
6. Users
  - a. Security Coordinators
  - b. Control Areas
7. On the fly flowgates
  - a. These will be overlooked in this version and address in the future

Pat has been able to accomplish more than it was actually requested of DFTF, since DFTF was asked to calculate seasonal values and Pat has been able to calculate daily or hourly values. The next step is to determine what to do with these factors.

If this process works as expected DFTF would make recommendations for fine-tuning and automation for an hourly process. There are instances where flowgates can be limited in both directions.

These will be addressed once the system is up and running. The Security Coordinators should identify those flowgates that can be limited in two directions.

Open Issues:

1. Limits in more than one direction
2. Shared units
3. Confidentiality
4. Large control areas may have a large swing in daily load not shown in this type of calculation
5. Archival procedures

Pat does have the ability to put shared unit into the system, but still needs to test that portion. If any member knows of a shared unit that should be treated as native load, they should inform Pat.

### **Cluster analysis**

This type of analysis shows, in one page, the systems that would be able to affect the flows on a flowgate. The clusters are given a weight from 10 to -10. This shows the areas that would have the best and worst impact on a flowgate. This gives a good high-level view of the areas that should be reviewed.

### **What needs to be submitted to SCS**

The initial draft can be used and modified to encompass the work that Pat has done. Mat will redraft the report to show the work that Pat has done and present it to DFTF during the morning session on June 1, 2000.

### **Modeling PARs in IDC Base Case**

OATI is proposing using a single injection point model for the MECS to IMO phase shifters. Chi believes that this method would not accurately capture the circulation that would be present. To fully capture this there should be multiple injection points. OATI has agreed to this as long as they are operated by one entity. The four injection points will have the following percentage that represent the amount of a transaction going through the phase shifters assigned to them: B3N 16%, L4D 34%, L51D 34%, J5D 16%. The other assumption used would be, when the phase shifters are not regulating the phase shifters are assumed to be at the maximum tap position. For transactions such as NY to MECS, there would need to be two tags, NY to IMO and IMO to MECS. Otherwise, IDC should assume that the transaction is being wheeled through PJM. This is because IMO does not allow wheeling.

It does not appear that the PARS would be fully installed by the summer. But in the event that they are installed, DFTF does not want to delay the work by OATI on implementing them.

DFTF will try to define this method as the generic model for modeling the phase shifters. This would then be used when other phase shifters are installed and implemented.

Chi will modify the PAR modeling document to make it more generic.

### **2000 Summer Base Case**

DFTF needs to check the PMAX values to ensure that they are not 9999, 0, or other erroneous numbers. Chi will mask the IMO bus names and send the model to NERC for posting. DFTF also needs to review the SDX data for some name changes.

The new summer base case was implemented May 31, 2000. Whoever has temporary flowgates needs to review the base case to ensure that they are implemented. The revised Book of Flowgates will be sent out next week that will encompass the temporary flowgates.

### **Status of certification and modeling of new Control Areas**

The Batesville control area is being delayed for implementation. The earliest that it may be implemented would be June 15.

### **Sub control area modeling**

MAPP is proposing modeling sub control areas. OATI does not appear to want to program for this type of situation. If this can be implemented in other NERC groups, such as tagging and modeling, there would be little or no programming needed.

DFTF believes that the capability of modeling sub control areas is needed in the near future. DFTF will draft some guidelines for implementing sub control areas.

### **Book of Flowgates for 2000 Summer Base Case**

Most of the temporary flowgates will be overwritten with the reading of the new Book of Flowgates. Those people who want to keep these flowgates will need to re-add the ones that they want or need.

DFTF should review the on-the-fly flowgates and submit those that should be converted permanently to Chi. To support Pat's software, the on-the-fly flowgates should also be sent to Chi for incorporation into the Book of Flowgates.

The Book of Flowgates will be reviewed and updated every other week. The Book of Flowgates should be error checked prior to submitting it to OATI.

### **Flowgate Definition Document**

This was included with one of the update write-ups to Policy 9, but DFTF has not heard any comments.

### **Threshold Cutoff for Flowgates Discussion**

The implementation of the variable threshold had been put on hold. Once there is a decision on the implementation, it will move quickly. There will still be a need for documentation for changing the cut-off threshold.

### **NERC, CMWG, IDCWG updates**

DFTF representatives should discuss with their CMWG representatives what they have going on. One of the primary issues that CMWG is working on is MRD. CMWG will need to get DFTF the list of MRD flowgates for the impending implementation of MRD. The list of MRD flowgates will need to be identified by flowgate number and not name. CMWG will also want a set limit for these flowgates also. Once the MRD flowgates are identified, they will need to be added to the Book of Flowgates.

The MRD system is essentially the same as last year, but the implementation time frame has been reduced from the day before to a few hours.

### **Restructuring of NERC**

A proposal from the AC's Subgroup Task Force on the reorganization of the AC's substructure will be made to the AC for approval at the July AC meeting.

One of the four new proposed subcommittees under consideration is a "Data and System Modeling" (or Information Management) Subcommittee.

### **Other Issues**

New control areas in the MMWG models may be difficult. This is due to the additional information that is needed. Ensuring that the control areas and bus numbering is correct would be the biggest help to DFTF.

DFTF would like to express their gratitude to Mat Long for his work in the power industry and DFTF.

### **Review Action Items**

- Brian will check on the status of the IMO contract.
- DFTF needs to check the PMAX values to ensure that they are not 9999, 0, or other erroneous numbers.
- Chi will mask the IMO bus names and send the model to NERC for posting.
- Brian will present the idea of modeling sub control areas to TISWG.
- Chi will modify the PAR modeling document to make it more generic.
- DFTF needs to review the directions of the flowgates and make corrections if needed.
- Pat will continue to modify his native load program.

### **Future Meetings**

June 19, 2000	Conference Call	11 a.m. for one hour
June 28–29, 2000	Chicago (if needed)	noon to noon

### **Adjournment**

Chairman Long adjourned the meeting at noon on June 1, 2000.