



# NORTH AMERICAN ELECTRIC RELIABILITY COUNCIL

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

## Distribution Factor Task Force

April 25–26, 2000  
Hyatt Regency New Orleans  
New Orleans, Louisiana

### Meeting Minutes

#### Attendance

Madison Long, Chairman	VACN	Eric T. Rogers	TVA
Jonathan Riley, Vice Chairman	EMSC	Linda Ponseti	EES
Thomas Vitez	MECS	Chetty Mamandur	SPP
Dave S. Mabry	PJM	Robert Rhodes	SPP
Patrick J. Shanahan	MAIN	Bill Rust	ENRON
Julie Pierce	MAPP	Chi Tang	IMO
Sharon Palmer	TVA	Brian M. Nolan	NERC

#### Administrative Matters

Chairman Madison Long called the Distribution Factor Task Force (DFTF) meeting to order at 1 p.m. on April 25, 2000. Each representative introduced himself.

Bill Rust from ENRON was in attendance to discuss modeling issues with the new ENRON Control Areas. He was excused from the meeting when issues that are not in the public arena were discussed. The DFTF was careful not to violate the FERC Standards of Conduct signed by the individual DFTF members.

The March 1–2, 2000 meeting minutes was approved with modifications. All of the action items from the March 1–2, 2000 meeting were either completed or are work in progress.

#### Assignments from last meeting

- Brian will see about having the DFTF roster reference the Security Coordinator that they represent instead of the Region they are from. This has been looked into. If it is possible to do this NERC will try to implement this as soon as possible.
- Mat will discuss Phase angle separation as it pertains to operating limits with Ben Li. This has been completed.

- Brian will check on the restructuring of the NERC Committees. There has been no discussion on this issue.
- Conrado will develop an import program that will read RAWD format. This item is still open.
- SC/CA's are to send a RAWD file that includes all of the facilities that they wish to add to the SDX system. This item is still open.
- SC/CA's are to add common names to the SDX data file. This item is still open.

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

### **Calculation of PAR Shift Factors**

This document is on revision 5. There are three work items that were listed for OATI to work on. One is to allow DFTF to label a phase shifter as fixed MW or fixed angle (control mode), with the ability to switch modes on the fly. The second is to recognize the phase shifter schedules in calculating PTDF's. The third is to calculate response factors. The injection point needs to be identified so IDC would know the proper way to model and calculate the values.

The phase shifter response factors could be expressed in relief on a flowgate per degree change, or as relief on a flowgate per tap position change or as relief on a flowgate per flow change through the phase shifters. Relief on a flowgate per flow change through the phase shifters may be the best way to express the phase shifter response factors. The phase shifter operators can internally convert the flow change desired through the phase shifters into the number of tap changes needed to make this change.

The IMO-MECS phase shifters will be modeled as fixed angle when they are not regulating and as fixed MW when they are regulating. . The presence of the Michigan-Ontario phase shifters in the case, when they are free flowing, will not impact TDFs because at zero degrees these phase shifters have essentially no impedance.

IDC calculates at the top of the hour automatically. After that, it can be requested to recalculate IDC at 20 and 40 after the hour. The recalculation will need to take the new PAR settings into account. TLRs that result in altering flows through phase shifter may result in toggling those phase shifters from a fixed angle operation to a fixed MW operation (or from fixed MW to fixed angle). Changing phase shifter control modes may impact the TDFs. In this case, it may be appropriate to do a portion of the curtailments using a fixed MW TDFs and a portion of the curtailments using fixed angle TDFs. The IDC is not currently capable of performing this type of calculation. Any time curtailments toggle the control mode of a PAR the matrix should be recalculated.

This change order is currently being evaluated by OATI and IDCWG.

## **2000 Summer Base Case**

Chi has sent out trial 2 of the summer base case. Mat has received some changes to this case already. If the PAR change order cannot be implemented by this summer, the PAR's would need to be modeled similarly to the HVDC ties. The HVDC ties are modeled using fictitious control areas, used only for transactions; otherwise they are modeled as open.

Trial 3 should be distributed by April 28, 2000. All base case problems need to be corrected by May 5, 2000. The SDX data needs to be brought up to date to match this case by May 12, 2000. One

problem with this schedule is having the TPS data updated in the SDX system; therefore the update to the SDX data may take until the following week. DFTF will try to implement the summer base case by May 22, 2000.

A message needs to be sent to Conrado stating that he needs to update the SDX data as soon as he returns from vacation.

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

All of the Enron control areas are expected to be in service June 1. There is no need to implement them in the winter base case or Book of Flowgates. The units are being modeled with one MW of load and one MW of generation. This is due to the way that IDC handles generators that are turned off.

### **Disclaimer**

A disclaimer will be added to the summer reference base case stating that it is for use for the IDC purposes, and that it may not be suitable for other uses.

The NERC Distribution Factor Task Force (DFTF) created this seasonal PSSE base case for the sole purpose of providing a power system model for the Interchange Distribution Calculator (IDC) software package. This PSSE case is a seasonal reference case and does not reflect the daily topology changes on the system. This model has been specifically designed by DFTF in order that it can be properly used by the applications of IDC. This case may not be suitable for other power system applications.

## **BOF Maintenance Issues**

### **Status of defined flowgate approval process**

An approval process for flowgates created on the fly is not practical. There is however an approval process for the Book of Flowgates. This will remain a DFTF function. When IDC creates a flowgate on the fly, it creates an email that is sent to Chi and Mat. These messages need to be forwarded to DFTF. The on-the fly- flowgates will be included in the Book of Flowgates at the next revision and will overwrite all flowgates in the IDC when a new Book of Flowgates is implemented in the IDC.

### **Status of IMO taking over BOF maintenance**

IMO is ready to take over the Book of Flowgates. The status of the contract with IMO is unknown at this time.

## **Native Load Contribution to FGs**

This task was given to DFTF by the MIC. This is not something that can be calculated by IDC at the time. . MUST can do per flowgate calculation in a more automated fashion, but there is still a lot of manual interaction. DFTF is to write a white paper on how this can be done. This is to be implemented by the summer. In the White Paper DFTF should point out what assumptions are being made, as well as the pros, cons and what erroneous result may result.

The method that MIC approved would take only positive contributions on flowgates into account. If the calculation is done on a peak case, it would probably over estimate the impact of native load. There would be a need to change the way that a lot of modeling is done, such as setting the MBASE of the nuclear units to non-zero values. This would apply to all units that have zero MBASE values. Another option would be to use an 80% base case. . The results will be posted on IDC.

Initially these values would be calculated seasonally. There are several entities that have told FERC that these values will be calculated and made available this summer.

Since TLR can only be called on Reliability flowgates, DFTF can do the calculations on those flowgates only. This will reduce the amount of computations that need to be performed.

Pat will look into ways to automate the MUST process, to eliminate as much user interaction as possible. DFTF should think about means to accomplish this task.

DFTF should review their own area based on Alternative 1 of the per generator method.

### **Modeling Sub-Control Areas**

DFTF has not received a request to model sub-control areas, but DFTF and IDC has the ability to do this. The sub-control area would need to register as a control area, to accommodate the tagging issues.

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

This item is on hold, since the IDC cannot handle this at the time. This item was discussed on the PMT conference call. Once this proposal is incorporated into Policy 9 then DFTF and IDC can proceed with this.

There is still a need to develop justification for these flowgate types, since this will eventually happen. It would also be helpful to track what could have been done to get relief had we had these flowgate types.

By using the variable cutoff threshold levels, DFTF would be able to do away with the proxy flowgates.

### **Other Issues**

DFTF discussed the ability of entities representing parties other than the Security Coordinators attending DFTF meetings. With some of the topics being discussed at DFTF meeting, there is the possibility of violating the FERC's Standards of Conduct that has been signed by DFTF members.

Access to the base cases prior to general release is another problem. IMO has to mask some of its data due to provincial rules. The publicly available base case has to match the Book of Flowgates though.

The issue of OATT's congestion management tool was discussed. The availability and the access of the data that is used in this tool were questioned.

### **Review Action Items**

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

**Future Meetings**

May 31–June 1, 2000

Atlanta

Noon to Noon

**Adjournment**

Chairman Long adjourned the meeting at noon on April 26, 2000.