July 28, 2000

VIA HAND DELIVERY

David P. Boergers
Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C.  20426

Re: Revised Lake Erie Emergency Re-dispatch Procedure,
Northeast Power Coordinating Council, Docket No. ER99-1957

Dear Secretary Boergers:


This revision to the initial filing incorporates process improvements to the emergency re-dispatch procedures based upon experience gained by the Lake Erie

\(^1\) The IMO is one of the LEER participants, but as a Canadian provincial entity the IMO is not subject to this Commission’s jurisdiction and is not submitting to FERC jurisdiction by joining this filing. However, the IMO will follow the LEER procedures.

\(^2\) The Pennsylvania-New Jersey-Maryland ("PJM") Interconnection L.L.C., also a LEER Participant, will be filing separately and will follow the revised LEER procedures.
participants during the 1999 summer operating period. Additionally, this revision includes clarifications provided to the FERC in NPCC's Compliance Filing dated June 1, 1999. The LEER Procedure document filed in 1999 has been shortened into a succinct LEER Agreement. The revised Agreement, attached hereto, is materially the same as the procedure previously approved by the FERC. See Id. The LEER Agreement continues to include the principles and elements of the emergency re-dispatch procedure. The information listed in the original document's appendices that deals with the day-to-day operating practices required to implement the procedure, along with technical and contact data which is subject to recurrent change is now contained in the LEER Operating Manual. The LEER Operating Manual does not define any aspects of the rates, terms and conditions of transmission service which are contained in any LEER participant's filed transmission tariffs or rate schedules. The LEER Operating Manual will be made available on NPCC’s website (http:\www.npcc.org).

In the future, to the extent that the LEER Agreement is amended, the Lake Erie participants anticipate filing these amendments with the Commission. Revisions to the Operating Manual will be posted on the NPCC website, on a LEER specific webpage, where there will be an on-line electronic process to receive and respond to comments.

The revised LEER Agreement strengthens the language contained in the 1999 LEER procedure filing referring to NERC Policy compliance and adds the specificity required in answer to the questions raised by FERC and the intervenors during the initial filing. See Id. The following list enumerates the primary changes/additions effected:

• Clarifies that LEER does NOT transform a non-firm transaction into a firm transaction, since the protecting transactions are not afforded a priority greater than the remaining Firm P-P transactions, See LEER Agreement 1 (2000);
• Specifies that the LEER group has agreed to reserve and "Tag" protecting transactions as non-firm hourly transmission service. See Id. at 3; and
• Points out that the protecting transactions may be susceptible to TLR cuts due to constraints on other flow-gates, and, if a protecting transaction is curtailed by NERC TLR actions, the protected transaction will also be curtailed, See Id. at 1, 3.

All signatories to the LEER Agreement have agreed to implement the revised procedure in their respective control rooms for the summer 2000 period. Pre-summer Control Room Operator Training on the revised procedure has been completed and the first drill was successfully held on June 1, 2000. The Lake Erie Security Process Working

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Group members (“LESPWG”) will continue to meet to enhance the procedure and identify other possible solutions to the problem of transmission congestion management.

Because the instant filing does not involve a rate increase within the meaning of Section 35.13(a)(2)(iii) of the Commission’s Regulations, 18 C.F.R. § 35.13(a)(2)(iii) (1999), to the extent not already provided elsewhere in this Transmittal Letter, the following information required by sections 35.13(b) and (c), 18 C.F.R. §§ 35.13(b) (c) (1999) is hereby provided:

• The proposed changes to the LEER Agreement are provided in Attachment A.

• A copy of this Agreement has been mailed to the commissions in the states of Delaware, Maryland, Michigan, New Jersey, New York, Ohio, Pennsylvania, Virginia, and West Virginia.

• A description of the changes to the LEER Agreement is provided in the body of this Filing.

• A statement of the reasons for the changes to the LEER procedures has been provided in the body of this Filing.

• No expenses or costs in connection with this Agreement have been alleged or judged in any administrative or judicial proceeding to be illegal, duplicative, or unnecessary costs that are demonstrably the product of discriminatory employment practices.

• A draft notice of filing suitable for publication in the Federal Register is provided in Attachment B to this Filing, and an electronic copy on a diskette has also been provided.

• This Agreement does not establish a rate schedule. Compensation for energy replacement or energy reduction shall be in accordance with local tariffs and control area agreements or at the prevailing emergency energy price as presently filed in the LEER participants’ existing tariffs, as applicable. It is difficult to accurately predict the extent that actual implementation of the LEER procedure has revenue impact because it is not possible to forecast how often emergencies will occur that will lead to the use of the LEER procedure.

• No specifically assignable facilities will be constructed in order to effect these changes.
The applicants believe that the LEER Agreement presented in this filing constitutes an affirmative step towards promoting the continued reliability of the Bulk Electric System in the Lake Erie region of the Eastern Interconnection. As such, the applicants seek a shortened notice period, and any and all waivers required in order to proceed with control room adoption of the revised procedures effective July 31, 2000, and that that the LEER Agreement described in this filing be made effective retroactively to that date upon Commission approval.

Respectfully submitted,

Edward A. Schwerdt
Executive Director
Northeast Power Coordinating Council
1515 Broadway, 43rd Floor
New York, NY 10036-8901

Andrea J. Chambers, Esq.
LeBoeuf, Lamb, Greene & MacRae, L.L.P.
1875 Connecticut Avenue, NW
Suite 1200
Washington, DC 20009-5728

Attorney for Northeast Power Coordinating Council
ATTACHMENT A

Lake Erie Emergency Re-dispatch Agreement

June 2000
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Lake Erie Emergency Re-dispatch (LEER) Agreement

Objective

The objective of the Lake Erie Emergency Re-dispatch (LEER) procedure is to facilitate emergency re-dispatch among participating control areas surrounding Lake Erie (AEP, AP, FE, MECS, NYISO, IMO, and PJM) to avoid the shedding of firm load. The LEER procedure is only intended to be implemented for emergency re-dispatch to relieve transmission constraints that could otherwise require another Lake Erie Company to shed firm load. The LEER procedure would only be fully executed when firm load curtailment is imminent. Lake Erie Control Areas must purchase emergency power from unconstrained directions or from other sources, if possible, before calling on the Lake Erie Emergency Re-dispatch procedure.

Attempts should be made by the Dependent System or Purchasing-Selling Entities operating in these areas, where applicable, to secure firm transmission services to support transactions that are required to supply firm load.

Lake Erie Security Coordinators (SCs) and Control Areas (CAs) will provide emergency aid in the form of intra-Control Area re-dispatch, inter-Control Area re-dispatch, re-configuration of the transmission system, and/or adjustment of phase angle regulating transformers to maintain Firm Load service when possible. Phase Angle Regulator adjustments are not limited to only those PARs under the control of the constrained system. SCs/CAs will determine emergency re-dispatch options and requirements prior to actions being needed.

Provisions of the LEER procedure are not intended to conflict with applicable transmission service agreements, tariffs filed with Federal and State regulatory commissions, NERC Policies, or any Federal (Canada) or Provincial regulatory requirements. The terms of such agreements, tariffs, policies, and requirements take precedence over LEER.

Under the Lake Erie Emergency Re-dispatch Process, transactions with non-firm or firm transmission reservations which would otherwise be curtailed in accordance with NERC Policy 9, resulting in the shedding of firm load, may be protected from curtailment through the implementation of re-dispatch actions. Once implemented, if a controlling action and any applicable transmission service for it are curtailed by NERC Transmission Loading Relief (TLR) actions, the protected transaction will also be curtailed. In this case, either the protected transaction is removed from the group of transactions appropriate for TLR by the controlling transaction's effective nullification of the protected transaction (effectively curtailing the transaction), or the controlling transaction itself is curtailed and the protected transaction is curtailed with it. In neither case is a protected transaction whose service priority was non-firm given higher priority than a transaction whose service priority was firm.

LEER is intended to make protection available for any transaction that serves firm load and is at risk of curtailment under NERC's TLR procedure, regardless of whether that transaction's transmission service priority is firm or non-firm. The choice of requesting that a particular transaction be protected under LEER depends on whether the load served is firm, and is a security decision of the Dependent Control Area. LEER is simply intended to provide an option
to avoid the curtailment of firm load resulting from TLR actions. The use of non-firm transmission to serve firm load is not condoned. The Dependent Systems or Purchasing-Selling Entities operating in these areas should attempt, where applicable, to secure firm transmission services to support transactions that are required to supply firm load.

The Constrained System's SC/CA should notify all other LEER participants of any pending constraints and potential impacts such that implementation of the LEER procedure may be considered. The LEER procedure will be initiated by the Dependent System's SC/CA, but must be directed by the Constrained System's SC/CA. The relevant parameters for all transactions covered by LEER should be supplied to the IDC database and the IDC software or equivalent should be the primary tool used to identify scheduled transactions that are subject to curtailment. This procedure is intended to be as dynamic as practicable, allowing the dependent and constrained system's SC/CA to update dependent transactions and controlling actions as system conditions change.

**Preliminary Actions**

Prior to implementing LEER, all Phase Angle Regulator adjustments and other “no cost” operating procedures should be utilized by Lake Erie participants to the benefit of reliability of the bulk power system. However, owners of PARs, etc., are not expected to incur excessive financial harm by operating PARs at a tap position that forces uneconomical operation.

Re-dispatch service shall be available to any participants within the Lake Erie Control Areas relying on interconnection transactions to meet firm load. Prior to resorting to re-dispatch service, the Dependent System shall curtail interruptible customers and reduce voltage, if applicable and as system conditions permit, and use their best efforts to obtain other sources of energy that do not adversely affect the Constrained System(s). Highly effective generation shifts, including generation under the control of Independent Power Producers and Power Marketers, should be used for re-dispatch, if applicable.

**Coordinating Actions**

SCs/CAs who determine at any time that they are dependent on purchases and may need to implement the LEER procedure shall provide, via the Security Coordinator Information System (SCIS), its expected peak dependence on covered transactions.

\[
\text{Dependency} = \text{Forecasted/Actual Load} - \text{Committed/Available Resources} - \text{MW Voltage Reduction} - \text{MW Interruptible/Curtailable Load}
\]

The Lake Erie SCs/CAs implementing LEER shall identify those dependent transactions in the IDC that require re-dispatch service. This list of dependent transactions should be published via the SCIS “System Emergency” messaging page for participating SC/ CAs to investigate possible mitigating measures including re-dispatch.

The SCs/CAs initiating the LEER procedure shall conduct a conference call to discuss their dependency on external transactions. At this time each Lake Erie SC/CA shall discuss expected
constraints on their system and how those constraints would impact the SCs/CAs with the dependency. The Constrained System's SC/CA and Dependent System's SC/CA should discuss the optimal re-dispatch solution for the expected constraint, taking into consideration generation available for re-dispatch (both reduction (DEC) and increase (INC) in generation). The Dependent SC/CA should determine the appropriate GSF/PTDF/OTDF for use in the re-dispatch evaluation, using on-line or off-line load flows that depict current system topology. The Constrained System's SC/CA, the one declaring TLR, must be in control of the re-dispatch process and agree with the effectiveness of all schedule/re-dispatch changes. This process may involve other SCs/CAs who are in control of and have available the generation designated for re-dispatch.

LEER re-dispatch can be implemented as follows, to the extent that generation is available and transmission tariffs allow:

1. Lower Controlling Generator(s) DEC Unit(s): The Dependent System's SCs/CAs or Purchasing-Selling Entities (PSEs) operating in these areas, where applicable, would arrange to replace the amount of generation that was lowered by the controlling generator with an Emergency Transaction.

2. Raise Controlling Generator(s) INC Unit(s): The Dependent System's SCs/CAs or PSEs operating in these areas, where applicable, would arrange to purchase the most effective generator increase, where available, as an Emergency Transaction.

3. A combination of the above two options may be exercised to effect the re-dispatch option.

These actions will allow for continued transfers across the constrained flowgate, minimizing the need to curtail scheduled transactions supplying firm load. The generation shift factors (GSFs) for use in the re-dispatch evaluation must be based on a current system analysis, which depicts the latest system topology. Re-dispatch should be at the request of the SCs/CAs (or on behalf of PSEs in their control area where applicable) with the dependency, but under the direction of the constrained SCs/CAs.

All SCs/CAs should expedite the emergency re-dispatch schedule without regard for the formality of obtaining transmission service reservations on OASIS, and permit after-the-fact reservations, where required. Transmission reservations are secured on OASIS and the protecting counter-flow transactions are E-tagged and entered in the IDC according to NERC policies. Reservations for LEER counter-flow transactions may be entered in the OASIS after the fact, but not exceeding a delay greater than four hours. The objective is to provide information on OASIS as soon as practicable.

The Lake Erie participants have agreed that transmission reservations for LEER emergency purchases would be reserved as non-firm hourly (Level 2 priority). All parties to a LEER transaction are responsible for entering the appropriate transmission reservations pertaining to their portion of the transaction into their OASIS nodes and the Load Control Area (area with the DEC Unit) for creating the appropriate NERC tag(s) needed to support the LEER counter-flow transaction. Since the protected transaction and the controlling transaction require each other to remove their contribution to the constraint, it is necessary to curtail both if either is curtailed.
Transactions for which re-dispatch is implemented shall be protected from further curtailment on the designated flowgate. A single LEER transaction may be used to protect multiple transactions flowing in the same direction (Block Protection). Series flowgates may be protected by a single LEER transaction. Once re-dispatch begins to protect dependent transactions, they are categorized as protected transactions. Any additional loading of the flowgate should not be associated with the protected transactions so long as the re-dispatch action is current. Re-dispatch can be applied to a whole or part of a transaction, as required by the magnitude of the dependency. When the re-dispatch action covers only a portion of the transaction, the unprotected part is still subject to curtailment.

The Dependent System's CAs will be required to compensate the Controlling System's CAs, or PSEs operating in these areas, where applicable, for all charges incurred in acquiring replacement energy including transmission charges consistent with existing CA-CA tariffs. Generators raised for LEER shall be paid in accordance with local tariffs and control area agreements or at the prevailing emergency energy price where applicable. The SCs/CAs with generators being reduced for LEER shall be compensated in accordance with local tariffs and control area agreements. Where applicable, the Dependent System's CAs will recover the expenses based on their current settlement practices.

If the unit(s) designated as the controlling action in the LEER procedure were to trip or become limited or unavailable in any way (e.g., derated or not able to provide additional relief if it has already been dispatched to control an unrelated transmission constraint), the Constrained System's SCs/CAs shall immediately notify the Dependent System's CAs that the re-dispatching service has been modified or canceled. All transactions designated as replacement energy for the limited/unavailable controlling transaction shall be canceled immediately.

The Dependent System's SC shall provide periodic updates via the SCIS as the level of dependency changes and as changes occur in dependent transactions. When the transmission system is no longer constrained, the Constrained System's SC/CA shall notify all other SCs/CAs that transactions can resume and re-dispatch service can be discontinued.

At any point in the execution of the procedure:

- The Dependent System's Security Coordinator must cancel the LEER procedure when it is determined that the dependency no longer exists. The Dependent System's SCs/CAs, or PSEs operating in those areas, where applicable, are responsible for canceling the emergency energy purchase that replaced the controlling action, after concurrence by the Constrained System's SCs/CAs that relief is no longer required, or that dependence no longer exists.

- The Constrained System's Security Coordinator must cancel LEER procedures if the system constraint is relieved when the controlling action is terminated. The Constrained System's SC/CA is responsible for notifying all parties once system constraints are relieved.

- The Controlling System's Security Coordinator must cancel LEER procedures if the controlling unit is no longer available for re-dispatch, has tripped off-line, or in the case an
“INC” unit is derated, or has been reduced (raised in the case of a “DEC” unit) to control a separate constrained facility; unless alternative re-dispatch can be immediately implemented.

- The Security Coordinator supplying emergency energy to replace the controlling action can cancel LEER procedures if the replacement energy becomes unavailable.

**LEER Procedure**

1. Lake Erie SCs/CAs report dependence on transactions and request a conference call using the SCIS “System Emergency” messaging page.

2. Dependent System's SCs/CAs summarize dependency during morning conference call (LEER Hotline).

3. Lake Erie SCs/CAs discuss projected constraints and how transfers to the dependent system impact constraints.

4. Dependent System's SCs/CAs discuss controlling actions and identify dependent transactions with Constrained System's SCs/CAs. SCs/CAs with dependency should:
   - Note Dependent Transaction Identification. Transaction must be entered into NERC Interchange Distribution Calculator (IDC) prior to becoming a candidate for LEER Procedure;
   - Discuss Control Area Source and Sinks of Dependent Transactions to determine GSF/PTDF/OTDF effect;
   - State MW amount of Dependent Transaction – list maximum when transaction MW profile varies.

   *This discussion does not have to be part of the initial conference call.*

5. The Constrained System's SCs/CAs will discuss available controlling actions and updated GSF/PTDF/OTDF effects based on current system topology.

   *This discussion does not have to be part of the initial conference call.*

6. The Constrained and Dependent System's SCs/CAs will agree on which dependent transactions are protected based on the controlling action. The net MW effect of the controlling action must equal the effect of the dependent transactions.

7. The Dependent System's SCs/CAs will arrange for emergency replacement energy in the amount of the controlling action when the agreed upon action is to lower generation. Dependent transactions become protected transactions once re-dispatch begins.

8. The Constrained System's SC/CA will notify other SCs/CAs via the SCIS when the LEER procedure is implemented and provide information including the controlling action,
the protected transactions, and the anticipated duration of the constraint. Periodic updates by either the Constrained or Dependent System's SCs regarding system conditions are to be provided via the SCIS “System Emergency” messaging page as system conditions permit.
APPENDIX A: DEFINITIONS AND ABBREVIATIONS

DEFINITIONS

**Constrained System** - The Control Area (and associated Security Coordinator) with a transmission limitation, which may curtail Dependent System’s transactions through TLR actions.

**Controlling Action(s)** - INC/DEC generation change that creates a LEER controlling transaction.

**Controlling System** - The Control Area (and associated Security Coordinator) with the re-dispatch option to control a constraint (not necessarily constrained system).

**Controlling Transaction** - The counter-flow transaction that effectively nullifies the protected transaction's effect on the constrained flow gate.

**DEC Unit** - Generator (s) associated with a controlling transaction that lowers its level of generation in a re-dispatch action.

**Dependency** - Forecasted Peak Load (MW) – Committed Available Resources (MW) – Voltage Reduction MW – Interruptible/ Curtailable Load (MW).

**Dependent System** - The Control Area (and associated Security Coordinator) that is dependent upon an import transaction for meeting internal firm load requirements and is in jeopardy of curtailing firm load.

**Dependent Transaction(s)** - Transactions required to serve firm load, which if curtailed will immediately result in load curtailment.

**Energy Management System (EMS)** – A tool used by transmission operators to monitor and control operation of their transmission systems.

**Flowgate** – A transmission facility (line, transformer, etc.), or collection of facilities, that frequently are involved in constraints to the transfer of power due to thermal, voltage, or dynamic stability limitations.

**Generation Shift Factor (GSF)** - MW effect on a flowgate resulting from the change in MW output of a generator (s).

**INC Unit** - Generator (s) associated with a controlling transaction that raises its level of generation in a re-dispatch action.

**Interchange Distribution Calculator (IDC)** – A tool developed under the North American Electric Reliability Council (NERC) sponsorship for guiding the execution of TLR actions. The IDC also provides other information for operators through a variety of data viewers.
**LEER Hotline** – The pre-arranged telephone conferencing service by which the LEER participants contact one another to arrange LEER actions.

**Outage Transfer Distribution Factor (OTDF)** – A measure of the impact of a power transfer transaction on a Flowgate when an outage occurs on another circuit. It is the electric power transfer distribution factor (PTDF) with a specific system facility removed from service (outaged). The OTDF applies only for the post-contingency configuration of the system under study.

**Power Transfer Distribution Factor (PTDF)** - A measure of the impact of a power transfer transaction on a Flowgate. It is a measure of the responsiveness or change in electrical loadings on system facilities due to a change in electric power transfer from one area to another, expressed in percent (up to 100%) of the change in power transfer. The PTDF applies only for the pre-contingency configuration of the system under study.

**Protected Transaction(s)** - The Dependent Transaction(s) protected against curtailment by implementation of LEER.

**Purchasing-Selling Entity (PSE)** – One who buys, sells, and arranges for the transfer of electric power in the energy market.

**Re-dispatch Option** - Generation raised (INC) or lowered (DEC) to control a transmission constraint.

**Security Coordinator Information System (SCIS)** – The Internet-based communication service provided to Security Coordinators by the NERC.

**Sink** – Collectively, the DEC unit and the Control Area in which it resides.

**Source** – Collectively, the INC unit and the Control Area in which it resides.

**Transmission Loading Relief (TLR)** – The Transmission Loading Relief procedures developed jointly by the market and reliability sectors of the electric industry, under the sponsorship of NERC.

**ABBREVIATIONS**

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<thead>
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<td>CA</td>
<td>Control Area</td>
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<td>EMS</td>
<td>Energy Management System</td>
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<td>GSF</td>
<td>Generation Shift Factor</td>
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<td>IDC</td>
<td>Interchange Distribution Calculator</td>
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<td>LEER</td>
<td>Lake Erie Emergency Re-dispatch</td>
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<tr>
<td>Acronym</td>
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<td>OTDF</td>
<td>Outage Transfer Distribution Factor</td>
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<td>Power Transfer Distribution Factor</td>
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<td>TLR</td>
<td>Transmission Loading Relief</td>
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APPENDIX B: LEER PROCEDURE EXAMPLE

Limiting facility – actual overload on the Kammer 500/345 kV transformer (AP) for the loss of the Belmont 500/345 kV transformer (AP). Consumers Energy (in MECS Control Area) is purchasing 100 MW of energy from New York and is the Dependent System. The MECS transaction from NY contributes 15 MW (100 x .15) to the constraint. The most effective controlling actions are to reduce Fort Martin and increase Gavin (GSF = 41%) generation, under AP and AEP control, respectively. Not implementing LEER would result in the curtailing of 100 MW of MECS load.

1. MECS (Dependent System) Control Area announces extent of dependency using Security Coordinator Information System.

2. Lake Erie SCs/CAs review projected system constraints and how MECS dependency is affected.
   - PTDF and GSF Viewers used to determine general distribution factor effect.
   - EMS or off-line powerflow used to determine appropriate controlling actions based on current system conditions (more accurate GSF developed).

3. MECS (Dependent System) Control Area initiates conference call via LEER Hot Line.

4. AP (Constrained System) Security Coordinator identifies projected constraint and appropriate controlling action. AP anticipates that the Kammer 500/345 kV transformer must be relieved by 200 MW. The dependent transactions have a 15% effect on the Kammer 500/345 kV transformer. GSFs indicate that most effective controlling action is to lower AP generation and raise AEP generation. AP and AEP are identified as the Controlling System Security Coordinators. In this instance AP has a dual role. Other SCs/CAs identify additional potential sources of replacement energy.

5. MECS (Dependent System) Security Coordinator, AP (Constrained and Controlling System) Security Coordinator, and AEP (Controlling System) Security Coordinator are to agree on the GSF effect of controlling action, replacement energy and identified dependent transactions. SCs/CAs agree that the appropriate controlling action is to reduce Fort Martin Generation (GSF = 41%). SCs/CAs must include the effect of emergency replacement energy on constrained facility. If AEP is determined to be the source of replacement energy, the analysis would indicate that Fort Martin Generation must be reduced by 37 MW to relieve constraint (15MW/.41). MECS arranges for 37 MW of replacement energy, to be supplied from AEP, to replace the controlling action on the AP system. Discussion does not have to be part of the initial conference call. MECS is responsible for the costs of the replacement energy.

6. AP (Constrained System) Security Coordinator identifies protected transactions, controlling action, and the anticipated duration of the constraint using the SCIS.
7. AP (Constrained Security Coordinator) notifies SCs/CAAs via SCIS once constraint is relieved.

8. AP (Constrained System) Security Coordinator notifies the LEER participants including AEP (Controlling System) and MECS (Dependent System) via telephone (LEER Hotline) once **controlling action** is no longer required.
ATTACHMENT A
Lake Erie Emergency Re-dispatch Procedure Agreement

December 22, 1998 June 2000
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**Lake Erie Emergency Re-dispatch Agreement**

**Objective**

The objective of the Lake Erie Emergency Re-dispatch (LEER) procedure is to facilitate emergency re-dispatch among participants within the Lake Erie Control Area and participating control areas surrounding Lake Erie (AEP, AP, FE, MECS, NYPP, OH, NYISO, IMO, and PJM) to avoid the shedding of firm load. The LEER procedure is only intended to be implemented for emergency re-dispatch to relieve transmission constraints that could otherwise require another Lake Erie Company to shed firm load. The LEER procedure would only be fully executed when firm load curtailment is imminent. Lake Erie Control Areas must purchase emergency power from unconstrained directions or from other sources, if possible, before calling on the Lake Erie Emergency Re-dispatch procedure.

Attempts should be made by the dependent Control Areas or their Dependent System or Purchasing-Selling Entities operating in these areas, where applicable, to secure firm transmission services to support transactions that are required to supply firm load.

Lake Erie Security Coordinators (SCs) and Control Areas (CAs) will provide emergency aid in the form of intra-Control Area re-dispatch, inter-Control Area re-dispatch, re-configuration of the transmission system, and/or adjustment of phase angle regulating transformers to maintain Firm Load service when possible. Phase Angle Regulator adjustments are not limited to only those PARs under the control of the constrained system. SCs/CAs will determine emergency re-dispatch options and requirements prior to actions being needed.

Provisions of the LEER procedure are not intended to conflict with applicable transmission service agreements or tariffs (e.g., the FERC filed tariffs, NERC Operating Policy 9, etc.) and the terms of such agreements or tariffs, agreements, tariffs filed with Federal and State regulatory commissions, NERC Policies, or any Federal (Canada) or Provincial regulatory requirements. The terms of such agreements, tariffs, policies, and requirements take precedence over LEER.

Under the Lake Erie Emergency Re-dispatch Process, transactions with non-firm or firm transmission reservations which would otherwise be curtailed in accordance with NERC Policy 9, resulting in the shedding of firm load, may be protected from curtailment through the implementation of re-dispatch actions. Once implemented, if a controlling action and any applicable transmission service for it are curtailed by NERC Transmission Loading Relief (TLR) actions, the protected transaction will also be curtailed. In this case, either the protected transaction is removed from the group of transactions appropriate for TLR by the controlling transaction’s effective nullification of the protected transaction (effectively curtailing the transaction), or the controlling transaction itself is curtailed and the protected transaction is curtailed with it. In neither case is a protected transaction whose service priority was non-firm given higher priority than a transaction whose service priority was firm.
LEER is intended to make protection available for any transaction that serves firm load and is at risk of curtailment under NERC's TLR procedure, regardless of whether that transaction's transmission service priority is firm or non-firm. The choice of requesting that a particular transaction be protected under LEER depends on whether the load served is firm, and is a security decision of the Dependent Control Area. LEER is simply intended to provide an option to avoid the curtailment of firm load resulting from TLR actions. The use of non-firm transmission to serve firm load is not condoned. The Dependent Systems or Purchasing-Selling Entities operating in these areas should attempt, where applicable, to secure firm transmission services to support transactions that are required to supply firm load.

The Constrained System's SC/CA should notify all other LEER participants of any pending constraints and potential impacts such that implementation of the LEER procedure may be considered. The LEER procedure will be initiated by the Dependent System's SC/CA, but must be directed by the Constrained System's SC/CA. The relevant parameters for all transactions covered by LEER should be supplied to the IDC database and the IDC software or equivalent should be the primary tool used to identify scheduled transactions that are subject to curtailment. This procedure is intended to be as dynamic as practicable, allowing for the dependent and constrained system's SC/CA to update dependent transactions and controlling actions as system conditions change.

**Preliminary Actions**

Prior to implementing LEER, all Phase Angle Regulator adjustments and other “no cost” operating procedures should be utilized by Lake Erie participants to the benefit of reliability of the bulk power system. However, owners of PARs, etc., are not expected to incur excessive financial harm by operating PARs at a tap position that forces uneconomical operation.

Re-dispatch service shall be available to any participants within the Lake Erie Control Areas relying on interconnection transactions to meet firm load. Prior to resorting to re-dispatch service, the Dependent System shall curtail interruptible customers and reduce voltage, if applicable and as system conditions permit, and use their best efforts to obtain other sources of energy, which does not adversely affect the constrained CAs. Highly effective generation shifts, including generation under the control of Independent Power Producers and Power Marketers, should be used for re-dispatch, if applicable.

**Generation Shift Factors**

**Coordinating Actions**

SCAs who determine at any time that they are dependent on purchases and may need to implement the LEER procedure shall provide, via the Security Coordinator Information System (SCIS), its expected peak dependence on covered transactions.
Dependency = Forecasted/Actual Load – Committed/Available Resources – MW Voltage Reduction – MW Interruptible/Curtailable Load

The Lake Erie SCs/CAs implementing LEER shall identify those dependent transactions in the IDC that require re-dispatch service. This list of dependent transactions should be published via the SCIS “System Emergency” messaging page for participating SC/CAs to investigate possible mitigating measures including re-dispatch.

The SCs/CAs initiating the LEER procedure shall conduct a conference call to discuss their dependency on external transactions. At this time each Lake Erie SC/CA shall discuss expected constraints on their system and how those constraints would impact the SCs/CAs with the dependency. The Constrained System’s SC/CA and Preliminary Generation Shift Factors have been developed by Ontario Hydro and are to be used as a default to the Dependent System’s SC/CA should discuss the optimal re-dispatch solution for the expected constraint, taking into consideration generation available for re-dispatch (both reduction (DEC) and increase (INC) in generation). The Dependent SC/CA should determine the appropriate advanced strategy when the potential exists that Firm Load would be curtailed due to an external transmission constraint. GSF/PTDF/OTDF for use in the re-dispatch evaluation, using on-line or off-line load flows that depict current system topology. The Constrained System’s SC/CA, the one declaring TLR, must be in control of the re-dispatch process and agree with the effectiveness of all schedule/re-dispatch changes. This process may involve other SCs/CAs who are in control of and have available the generation designated for re-dispatch.

Generation Shift Factors are defined from a generator source bus to a specific predefined generator sink bus in order to assist SCs/CAs in quickly identifying effective re-dispatch options. LEER re-dispatch can be implemented as follows, to the extent that generation is available and transmission tariffs allow:

1. **Lower Controlling Generator (s):** The dependent Lake Erie SCs/CAs or their DEC Unit (s): The Dependent System’s SCs/CAs or Purchasing-Selling Entities (PSEs) operating in these areas, where applicable, would arrange to replace the amount of generation that was lowered by the controlling generator with an Emergency Transaction.

2. **Raise Controlling Generator (s):** The dependent Lake Erie SCs/CAs or their PSEs (s) INC Unit (s): The Dependent System’s SCs/CAs or PSEs operating in these areas, where applicable, would arrange to purchase the most effective generator increase, where available, as an Emergency Transaction.

3. A combination of the above two options may be exercised to effect the re-dispatch option.

These actions will allow for continued transfers across the constrained flowgate, minimizing the need to curtail scheduled transactions supplying firm load. The constrained SCs/CAs should determine the appropriate generation shift factors (GSFs) for use in the re-dispatch evaluation. These factors must be based on a current system analysis, which depicts the latest system topology. Re-dispatch should be at the request of the SCs/CAs (or on behalf of PSEs in their
PSES control area (where applicable) with the dependency, but under the direction of the constrained SCs/CAs.

**Coordination Procedures**

By 8:00 A.M. each day, those SCs/CAs who determine they are dependent on purchases need to implement the LEER procedure, shall provide, via the Security Coordinator Information System (SCIS), its expected peak dependence on covered transactions, and whether it is relying on non-firm transmission service for some portion of the transaction. The Lake Erie SCs/CAs implementing LEER shall identify those dependent transactions in the IDC that require re-dispatch service. This list of dependent transactions should be published via the SCIS for participating CAs to investigate possible mitigating measures including redispatch.

The SCs/CAs initiating the LEER procedure shall conduct a conference call to discuss their dependency on external transactions. At this time each Lake Erie SCs/CAs shall discuss expected constraints on their system and how those constraints would impact the SCs/CAs with the dependency. Constrained SCs/CAs and the dependent SCs/CAs should discuss the optimal re-dispatch solution for the expected constraint, taking into consideration generation available for redispatch (both reduction and increase in generation). The Constrained SCs/CAs should determine the appropriate GSF/PTDF/OTDF for use in the re-dispatch evaluation, using on-line or off-line load flows that depict current system topology. The constrained SCs/CAs, the one declaring TLR, must be in control of the re-dispatch process and agree with the effectiveness of all schedule/re-dispatch changes. This process may involve other SCs/CAs who are in control of and have available the generation designated for re-dispatch.

All SCs/CAs should expedite the emergency re-dispatch schedule without regard for the formality of obtaining transmission service reservations on OASIS, and permit after-the-fact reservations, if required, where required. Transmission reservations are secured on OASIS and the protecting counter-flow transactions are E-tagged and entered in the IDC according to NERC policies. Reservations for LEER counter-flow transactions may be entered in the OASIS after the fact, but not exceeding a delay greater than four hours. The objective is to provide information on OASIS as soon as practicable.

The Lake Erie participants have agreed that transmission reservations for LEER emergency purchases would be reserved as non-firm hourly (Level 2 priority). All parties to a LEER transaction are responsible for entering the appropriate transmission reservations pertaining to their portion of the transaction into their OASIS nodes and the Load Control Area (area with the DEC Unit) for creating the appropriate NERC tag(s) needed to support the LEER counter-flow transaction. Since the protected transaction and the controlling transaction require each other to remove their contribution to the constraint, it is necessary to curtail both if either is curtailed. Transactions for which re-dispatch is implemented shall be protected from further non-firm curtailment on the designated flowgate. A single LEER transaction may be used to protect
multiple transactions flowing in the same direction (Block Protection). Series flowgates may be protected by a single LEER transaction. Once re-dispatch begins to protect dependent transactions, they are categorized as protected transactions. Any additional loading of the flowgate should not be associated with the protected transactions so long as the re-dispatch action is current. Re-dispatch can be applied to a whole or part of a transaction, as required by the magnitude of the dependency. When the re-dispatch action covers only a portion of the transaction, the unprotected part is still subject to curtailment.

The SCs/CAs with generators being reduced for LEER shall receive an energy exchange for the megawatts they reduce. Generators raised for LEER shall be paid in accordance with local tariffs and control area agreements, or at the prevailing emergency energy price where applicable. If the unit(s) designated as the controlling action in the LEER procedure were to trip or become limited or unavailable in any way (e.g., derated or already dispatched to control an unrelated transmission constraint), the constrained SCs/CAs shall immediately notify the dependent SCs/CAs that the re-dispatching service has been modified or canceled. All transactions designated as replacement energy for the controlling transaction shall be canceled immediately.

The Constrained SC shall provide periodic updates via the SCIS as the level of dependency changes and system conditions permit. The Dependent SC/CA shall provide updates to the Constrained SC regarding any changes dependent transactions.

When the transmission system is no longer constrained, the SCs/CAs shall notify all other SCs/CAs that transactions can resume and re-dispatch service can be discontinued.

The Dependent System's CAs will be required to compensate the Controlling System's CAs, or PSEs operating in these areas, where applicable, for all charges incurred in acquiring replacement energy including transmission charges consistent with existing CA-CA tariffs. Generators raised for LEER shall be paid in accordance with local tariffs and control area agreements or at the prevailing emergency energy price where applicable. The SCs/CAs with generators being reduced for LEER shall be compensated in accordance with local tariffs and control area agreements. Where applicable, the Dependent System's CAs will recover the expenses based on their current settlement practices.

If the unit(s) designated as the controlling action in the LEER procedure were to trip or become limited or unavailable in any way (e.g., derated or not able to provide additional relief if it has already been dispatched to control an unrelated transmission constraint), the Constrained System's SCs/CAs shall immediately notify the Dependent System's SCs/CAs that the re-dispatching service has been modified or canceled. All transactions designated as replacement energy for the limited/unavailable controlling transaction shall be canceled immediately.

The Dependent System's SC shall provide periodic updates via the SCIS as the level of dependency changes and as changes occur in dependent transactions. When the transmission system is no longer constrained, the Constrained System's SC/CA shall notify all other SCs/CAs that transactions can resume and re-dispatch service can be discontinued.

**LEER Procedure Levels.**

**Clarification of LEER transaction compensation.**

**Replaced below.**

**LEER levels have been eliminated based on experienced gained.**
Under the Lake Erie Security Process, non-firm transactions which would otherwise be curtailed, in accordance with NERC Policy 9, resulting in the shedding of firm load, may be protected from curtailment through the implementation of re-dispatch actions. The relevant parameters for all transactions covered by LEER should be supplied to the iIDC database and the iIDC software or equivalent should be the primary tool to identify scheduled transactions that are subject to curtailment. The LEER procedure can be initiated by the Dependent Lake Erie SCs/CAs, but must be directed by the constrained Lake Erie SCs/CAs. The applicable stages of LEER which may be implemented concurrently with NERC TLR procedures are:

**LER A:** When the initiation of new schedules is halted under NERC TLR Level 2, a dependent transaction under LEER will be allowed to be picked up and maintained concurrently with re-dispatch actions.

**LER B:** When non-firm transactions are curtailed under NERC TLR Level 3, a dependent transaction may continue or be picked up upon the initiation of re-dispatch action (or continuation of re-dispatch action initiated under LEER A). Transactions identified for curtailment are curtailed by transmission priority in accordance with the NERC TLR procedures. Protected transactions are not curtailed.

**LER C:** When re-dispatch actions are being implemented under NERC TLR Level 4, protected transactions for which re-dispatch was implemented under LEER B or LEER A will continue so long as such action does not result in the curtailment of firm transactions. To avoid the curtailment of firm load on the dependent SC/CA, it is encouraged if applicable, that alternative agreements be arranged for re-dispatch/replacement energy to avoid the curtailment of both non-firm protected and firm transactions.

According to NERC Operating Policy 9, firm transmission service carries the obligation to re-dispatch generation prior to implementing curtailments.

**Communications Protocols**

Security Coordination Information System (SCIS) is used to communicate NERC Transmission Loading Relief (TLR) Levels and actions to all SCs. The dependent SCs/CAs are responsible for notifying other Lake Erie SCs/CAs of the magnitude of expected dependency prior to the morning conference call via the SCIS. The SCIS is also used to indicate the time of any planned conference calls. The constrained SCs/CAs are responsible for notifying other Lake Erie SCs/CAs when the LEER procedures have been implemented on the behalf of the SCs/CAs protecting firm load. The message must include the controlling action, MW amount of flowgate reduction, protected NERC tags, and total MW transaction(s) protected. Protected transactions only apply to those protected by the controlling action on the constrained flowgate. Periodic updates shall be supplied as the level of dependency changes and system conditions permit. The constrained SCs/CAs are responsible for notifying all other SCs/CAs once the LEER procedures are no longer necessary.
Lake Erie Emergency Re-dispatch Agreement Procedure

NERC Hotline—A conference call is initiated by the SCs/CAs that anticipates a capacity deficient situation. During the conference call, the constrained SCs/CAs will discuss re-dispatch options and determine the potential location of replacement energy.

NERC TLR web page—Used to provide information about TLR to market participants.

At any point in the execution of the procedure:

- The **Dependent System's** Security Coordinator must cancel the LEER procedure when it is determined that the dependency no longer exists. The **Dependent System's** SCs/CAs, or PSEs operating in those areas, where applicable, are responsible for canceling the emergency energy purchase that replaced the **controlling action**, after concurrence by the **Constrained System's** SCs/CAs that relief is no longer required, or that dependence no longer exists.

- The **Constrained System's** Security Coordinator must cancel LEER procedures if the system constraint is relieved when the **controlling action** is terminated. The **Constrained System's** SC/CA is responsible for notifying all parties once system constraints are relieved.

- The **Controlling System's** Security Coordinator must cancel LEER procedures if the controlling unit is no longer available for re-dispatch, has tripped off-line, or in the case an “INC” unit is derated, or has been reduced (raised in the case of a “DEC” unit) to control a separate constrained facility; unless alternative re-dispatch can be immediately implemented.

- The Security Coordinator supplying emergency energy to replace the **controlling action** can cancel LEER procedures if the replacement energy becomes unavailable.

LEER Procedure

1. **Lake Erie** SCs/CAs report dependence on transactions and request a conference call using the SCIS “System Emergency” messaging page.

2. **Dependent Lake Erie** SCs/CAs summarize dependency during morning conference call (NERC LEER Hotline).

3. Lake Erie SCs/CAs discuss projected constraints and how transfers to the **dependent system** impact constraints.

4. The **Dependent Lake Erie** SCs/CAs will discuss controlling actions and identify dependent transactions with the **Constrained System's** SCs/CAs. SCs/CAs with dependency should:
   
   - Note Dependent Transaction Identification. Transaction must be entered into NERC interim Interchange Distribution Calculator (iIDC) prior to becoming a candidate for LEER Procedure;
Lake Erie Emergency Re-dispatch Agreement Procedure

- CADiscuss Control Area Source and Sinks of Dependent Transactions discussed to determine GSF/PTDF/OTDF effect.
- State MW amount of Dependent Transaction – list maximum when transaction MW profile varies.

This discussion does not have to be part of the initial conference call.

5.5. The Constrained Lake Erie System’s SCs/CAs will discuss available controlling actions and updated GSF/PTDF/OTDF effects based on current system topology.

This discussion does not have to be part of the initial conference call.

6.6. The Constrained and Dependent Lake Erie System’s SCs/CAs will agree on which dependent transactions are protected based on the controlling action. The net MW effect of the controlling action must equal the effect of the dependent transactions.

7.7. The Dependent System’s SCs/CAs will arrange for emergency replacement energy in the amount of the controlling action when the agreed upon action is to lower generation. The replacement energy PTDF/OTDF effect should be significant unless otherwise agreed upon by the involved SCs/CAs. Dependent transactions become protected transactions once re-dispatch begins.

The Dependent CAs will be required to compensate the Controlling CAs, or their Purchasing-Selling Entities (PSEs) where applicable, for all costs incurred in acquiring replacement energy including transmission charges. Where applicable, the Dependent CAs will recover the expenses based on their current settlement practices.

8. The Constrained SCs/CAs will notify other SCs/CAs via the SCIS when the LEER procedure is implemented and provide information including the controlling action, the protected transactions, and the anticipated duration of the constraint. Periodic updates regarding system conditions are to be provided via the SCIS as system conditions permit.

9. The constrained or controlling SCs/CAs are responsible for notifying all parties once system constraints are relieved or if the controlling generator trips off line, becomes derated or is reduced for an unrelated constraint.

10. The Dependent SCs/CAs, or their PSEs where applicable, are responsible for canceling the emergency energy purchase that replaced the controlling action, after concurrence by the constrained SCs/CAs that relief is no longer required, or that dependence no longer exists.

8. The Constrained System’s SC/CA will notify other SCs/CAs via the SCIS when the LEER procedure is implemented and provide information including the controlling action, the protected transactions, and the anticipated duration of the constraint. Periodic updates by either the Constrained or Dependent System’s SCs regarding system conditions are to
be provided via the SCIS “System Emergency” messaging page as system conditions permit.

At any point:

? The Dependent Security Coordinator must cancel LEER procedures when it is determined that the dependency no longer exists.

? The Constrained Security Coordinator must cancel LEER procedures if the system constraint is relieved when the controlling action is terminated.

? The Controlling Security Coordinator must cancel LEER procedures if the controlling unit is no longer available for re-dispatch, has tripped off-line, is derated, or has been reduced to control a separate constrained facility; unless alternative re-dispatch can be immediately implemented.

? The Security Coordinator supplying emergency energy to replace the controlling action can cancel LEER procedures if the replacement energy becomes unavailable.
APPENDIX A: DEFINITIONS

Constrained System: SC or CA with transmission limitation, which may curtail Dependent System’s transactions.

Controlling System: SC or CA with re-dispatch option to control constraint (not necessarily constrained system).

Dependent System: SC or CA in jeopardy of curtailing firm load due to capacity shortage.

Dependency: Forecasted Peak Load (MW) – Committed Available Resources (MW) – Voltage Reduction MW – Interruptible/Curtailable Load (MW).

Dependent Transactions: Transactions required to serve firm load.

Generation Shift Factor: MW effect on a flowgate resulting from the change in MW output of a generator (s).

Power Transfer Distribution Factor: MW effect on a flowgate resulting from the change in MW output between the CA source and CA sink.

Protected Transactions: Dependent transactions protected by re-dispatch service.

Re-dispatch Option: Generation raised or lowered to control a transmission constraint.
APPENDIX B: ACRONYMS

Control Area (CA)
Generation Shift Factor (GSF)
interim Interchange Distribution Calculator (iIDC)
Lake Erie Emergency Re-dispatch (LEER)
Outage Transfer Distribution Factor (OTDF)
Power Transfer Distribution Factor (PTDF)
Security Coordinator (SC)
Security Coordinator Information System (SCIS)
Transmission Loading Relief (TLR)

APPENDIX A: DEFINITIONS AND ABBREVIATIONS

DEFINITIONS

**Constrained System** - The Control Area (and associated Security Coordinator) with a transmission limitation, which may curtail Dependent System’s transactions through TLR actions.

**Controlling Action(s)** - INC/DEC generation change that creates a LEER controlling transaction.

**Controlling System** - The Control Area (and associated Security Coordinator) with the re-dispatch option to control a constraint (not necessarily constrained system).

**Controlling Transaction** - The counter-flow transaction that effectively nullifies the protected transaction's effect on the constrained flow gate.

**DEC Unit** - Generator (s) associated with a controlling transaction that lowers its level of generation in a re-dispatch action.

**Dependency** - Forecasted Peak Load (MW) – Committed Available Resources (MW) – Voltage Reduction MW – Interruptible/Curtailable Load (MW).

**Dependent System** - The Control Area (and associated Security Coordinator) that is dependent upon an import transaction for meeting internal firm load requirements and is in jeopardy of curtailing firm load.
**Dependent Transaction(s)** - Transactions required to serve firm load, which if curtailed will immediately result in load curtailment.

**Energy Management System (EMS)** – A tool used by transmission operators to monitor and control operation of their transmission systems.

**Flowgate** – A transmission facility (line, transformer, etc.), or collection of facilities, that frequently are involved in constraints to the transfer of power due to thermal, voltage, or dynamic stability limitations.

**Generation Shift Factor (GSF)** - MW effect on a flowgate resulting from the change in MW output of a generator (s).

**INC Unit** - Generator (s) associated with a controlling transaction that raises its level of generation in a re-dispatch action.

**Interchange Distribution Calculator (IDC)** – A tool developed under the North American Electric Reliability Council (NERC) sponsorship for guiding the execution of TLR actions. The IDC also provides other information for operators through a variety of data viewers.

**LEER Hotline** – The pre-arranged telephone conferencing service by which the LEER participants contact one another to arrange LEER actions.

**Outage Transfer Distribution Factor (OTDF)** – A measure of the impact of a power transfer transaction on a Flowgate when an outage occurs on another circuit. It is the electric power transfer distribution factor (PTDF) with a specific system facility removed from service (outaged). The OTDF applies only for the post-contingency configuration of the system under study.

**Power Transfer Distribution Factor (PTDF)** - A measure of the impact of a power transfer transaction on a Flowgate. It is a measure of the responsiveness or change in electrical loadings on system facilities due to a change in electric power transfer from one area to another, expressed in percent (up to 100%) of the change in power transfer. The PTDF applies only for the pre-contingency configuration of the system under study.

**Protected Transaction(s)** - The Dependent Transaction(s) protected against curtailment by implementation of LEER.

**Purchasing-Selling Entity (PSE)** – One who buys, sells, and arranges for the transfer of electric power in the energy market.

**Re-dispatch Option** - Generation raised (INC) or lowered (DEC) to control a transmission constraint.
Security Coordinator Information System (SCIS) – The Internet-based communication service provided to Security Coordinators by the NERC.

Sink – Collectively, the DEC unit and the Control Area in which it resides.

Source – Collectively, the INC unit and the Control Area in which it resides.

Transmission Loading Relief (TLR) – The Transmission Loading Relief procedures developed jointly by the market and reliability sectors of the electric industry, under the sponsorship of NERC.

ABBREVIATIONS

CA Control Area
EMS Energy Management System
GSF Generation Shift Factor
IDC Interchange Distribution Calculator
LEER Lake Erie Emergency Re-dispatch
OTDF Outage Transfer Distribution Factor
PSE Purchasing-Selling Entity
PTDF Power Transfer Distribution Factor
SC Security Coordinator
SCIS Security Coordinator Information System
TLR Transmission Loading Relief
APPENDIX C: LEER PROCEDURE EXAMPLE

Limiting facility – actual overload on South Ripley (NYPP) to Erie (PJM) 230 kV tie line. FE is purchasing from Ontario Hydro and is the dependent Control Area. The most effective controlling actions are to lower South Ripley (GSF = 65%) and Dunkirk (GSF = 34%) generation, both under NYPP control (GSFs with respect to a common reference generator). Assuming OH is determined to be the source of emergency replacement energy for the controlling action (GSF = -10%). Not implementing LEER would result in the curtailment of 100 MW of FE load.

APPENDIX B: LEER PROCEDURE EXAMPLE

Limiting facility – actual overload on the Kammer 500/345 kV transformer (AP) for the loss of the Belmont 500/345 kV transformer (AP). Consumers Energy (in MECS Control Area) is purchasing 100 MW of energy from New York and is the Dependent System. The MECS transaction from NY contributes 15 MW (100 x .15) to the constraint. The most effective controlling actions are to reduce Fort Martin and increase Gavin (GSF = 41%) generation, under AP and AEP control, respectively. Not implementing LEER would result in the curtailment of 100 MW of MECS load.

1. F.E. (Dependent CA) identifies extent of dependency using Security Coordinator Information System.

1. MECS (Dependent System) Control Area announces extent of dependency using Security Coordinator Information System.

2. Lake Erie SCs/CAs review projected system constraints and how MECS dependency is affected.

2. Lake Erie SCs/CAs review projected system constraints and how FE dependency is affected:
   - PTDF and GSF Viewers used to determine general distribution factor effect.
   - EMS or off-line powerflow used to determine appropriate controlling actions based on current system conditions (more accurate GSF developed).

3. F.E. MECS (Dependent CA) System) Control Area initiates conference call via NERC LEER Hot Line.

4. PJM AP (Constrained System) Security Coordinator) identifies projected constraint and appropriate controlling action. PJM AP anticipates that the South Ripley line Kammer 500/345 kV transformer must be relieved by 14200 MW. The dependent transactions have a 15% effect on the Kammer 500/345 kV transformer. GSFs indicate that most effective controlling action is to lower NYPP AP generation and raise AEP generation. NYPP AP and AEP are identified as the Controlling System Security

Updated to reflect the scenario used in the 2000 drill.
Coordinators. In this instance AP has a dual role. Other SCs/CAs identify additional potential sources of replacement energy.

5. FE (Dependent CA), PJM (Constrained Security Coordinator), and NYPP (Controlling Security Coordinator), MECS (Dependent System) Security Coordinator, AP (Constrained and Controlling System) Security Coordinator, and AEP (Controlling System) Security Coordinator are to agree on the GSF effect of controlling action, replacement energy and identified dependent transactions. SCs/CAs agree that the appropriate controlling action is to reduce South Ripley Fort Martin Generation (65%)(GSF = 41%). SCs/CAs must include the effect of emergency replacement energy on constrained facility. If OH AEP is determined to be the source of replacement energy (10%), the analysis would indicate that South Ripley Fort Martin Generation must be reduced by 25 MW to relieve constraint (14MW/(.65-.1)) FE(15MW/.41)). MECS arranges for 25MW of replacement energy, to be supplied from OH AEP, to replace the controlling action on the NYPP AP system. Discussion does not have to be part of the initial conference call. MECS is responsible for the costs of the replacement energy.

6. FE determines to which step the LEER procedure is to be implemented depending on the severity of the dependency. If FE determines that the dependency can be satisfied by protecting Non-Firm Transaction > 15% effect they will implement Step B (refer to LEER procedures identified above).

7. PJM (Constrained System) Security Coordinator) identifies protected transactions, controlling action, and the anticipated duration of the constraint using the SCIS.

8. PJM (Constrained Security Coordinator) notifies SCs/CAs via SCIS once constraint is relieved.

9. PJM (Constrained Security Coordinator) notifies NYPP (Controlling Security Coordinator) via telephone AP (Constrained System) Security Coordinator notifies the LEER participants including AEP (Controlling System) and MECS (Dependent System) via telephone (LEER Hotline) once controlling action is no longer required.

10. PJM (Constrained Security Coordinator) notifies FE/CEI (Dependent Security Coordinator) via telephone once constraint is relieved.

11. FE (Dependent Control Area) notifies OH that replacement energy is no longer required.
APPENDIX D: HELPFUL EQUATIONS / CALCULATIONS

1. Dependency Calculation

Dependency = Forecasted/Actual Load – Committed/Available Resources - MW Voltage Reduction - MW Interruptible/Curtailable Load

2. Dependent Transaction Flowgate Effect

Dependent Transaction Flowgate Effect = (Transaction MW Amount) \times PTDF

(PTDF to be replaced by OTDF where appropriate)

3. Re-dispatch Requirement 1 (lower generation)

Re-dispatch requirement = \frac{Dependent Transaction Flowgate Effect}{\text{Controlling Action GSF} \pm \text{Replacement Energy GSF}}

4. Re-dispatch Requirement 2 (raise generation)

Redispatch requirement = \frac{Dependent Transaction Flowgate Effect}{\text{Controlling Action GSF}}
APPENDIX E:  SCIS TEMPLATES

TEMPLATE 1:  PRE-CONFERENCE CALL SCIS MESSAGE – DEPENDENT SC/CA
LEER SC IS DECLARING EMERGENCY DEPENDENCY ON TRANSMISSION IMPORTS

LEER LEVEL________;  
DEPENDENT SC________;  
DEPENDENCY START_____: MMDDYY HHHH TZ  
DEPENDENCY END_______: MMDDYY HHHH TZ  
LEER CONFERENCE CALL___: MMDDYY HHHH TZ  

_____________  
REQUESTED  
PROTECTED_____ TRANSACTION  
TRANSACTION ID(TAG)____ MW  
1  
2  
3  
4  
5  

COMMENTS:  

TEMPLATE 2:  DECLARING LEER – CONSTRAINED SC/CA
LEER EMERGENCY RE-DISPATCH HAS BEEN PERFORMED TO PROTECT FIRM LOAD CURTAILMENTS AT THE REQUEST OF THE DEPENDENT SC

LEER LEVEL________;  
CONSTRAINED SC_____;  
CONSTRAINED CA_____;  
DEPENDENT SC______;  
LIMITING FLOWGATE_____;  
FLOWGATE ID#______;  
TIME_______;  
DIRECTION OF LOADING_____;  
idDC QUERY NAME_____;  

RE-DISPATCH UNIT(S) MW DECREASED:  
RE-DISPATCH UNIT(S)/ZONE/CA MW INCREASED:  
TOTAL MW REDUCTION ON FLOWGATE DUE TO RE-DISPATCH:  

__________________________  
PROTECTED_____ TRANSACTION FLOWGATE  
TRANSACTION ID(TAG)____ MW____ MW  
1  
2  
3  
4  
5  

TOTAL PROTECTED TRANSACTION MW:  

COMMENTS:  

Moved to LEER Operating Manual.
NOTICE OF FILING


NPCC states that copies of the filing were mailed to the commissions in the states of Delaware, Maryland, Michigan, New Jersey, New York, Ohio Pennsylvania, Virginia, and West Virginia.

The LEER Participants seek a waiver in order to proceed with control room adoption of the revised procedures effective July 31, 2000, and that that the LEER Agreement described in this filing be made effective retroactively to that date upon Commission approval.

Any person desiring to be heard or to protest such filing should file a motion to intervene or protest with the Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, D.C. 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211 and 385.214). All such motions or protests should be filed on or before the comment date. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a motion to intervene. Copies of these filings are on file with the Commission and are available for public inspection. This filing may also be viewed on the Internet at http://www.ferc.fed.us/ online/rims.htm (call 202-208-222 for assistance).

David P. Boergers
Secretary