Entergy

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July 27, 2004

Mr. Michael K. Webb, NRR Project Manager
U.S. Nuclear Regulatory Commission
M/S OWFN / 7D-1
Washington, DC 20555

Subject: River Bend Station - Unit 1
Docket No. 50-458
License No. NPF-47
NRC Temporary Instruction 2515/156
"Offsite Power System Operational Readiness"

File No.: G9.5, G9.5.1

RBG-46301
RBF1-04-0132

Mr. Webb:

As requested in a conference call with NRC staff, enclosed is River Bend Station's response to NRC questions regarding the operational readiness of our offsite power systems. The information provided in this letter is based on discussions held between Entergy Transmission and Distribution Department personnel, Entergy Nuclear South personnel and NRC staff on July 22, 2004. This is provided for the NRC's information and does not contain any commitments.

Should you have any questions regarding the attached, please contact Mr. Ronnie Cole at (225) 381-4826 or myself at 381-4157.

Sincerely,

David N. Lorfing
Manager – Licensing (Acting)

DNL/KYH
Enclosure

A001

cc: U. S. Nuclear Regulatory Commission
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1. Based on the responses received from the Grid Temporary Instruction, it is the staff's understanding that Entergy has the capability to perform real-time contingency analysis. In the response, it was stated that Entergy employs real-time contingency analysis software developed by Areva and that the software is connected directly to a State Estimator that updates automatically every ninety seconds from the time of the last completed study. It is not clear to the staff as to why the real-time contingency analysis is not being used to calculate post-trip voltages at your plant.

   Response:

   Entergy calculates transfer capability on an N-1 (single generation or transmission element contingency) basis by simulating the loss of all transmission facilities 230KV and above within the Entergy control area including Nuclear Power Plants (NPP), and therefore, would provide post-trip voltages at the NPP with a single unit plant trip only. However, the analysis software is not programmed to perform N-2 (or greater) contingency analysis, which would include a transmission contingency and a plant trip, concurrent with accident loading conditions. In addition, at this time the NPP voltage requirements are not included in the model, only NERC voltage requirements. Notifications are made to the Operating Subcommittee, which includes representation by Entergy Nuclear-South (ENS) management personnel, when conditions warrant per the "Entergy Curtailment Policy and Procedure."

   Entergy is currently pursuing programming changes to the real time contingency analysis software to perform N-2 contingencies measured against the specific voltage requirements of the NPP along with a formal procedure for notification by summer 2005. **(Per Teleconference agreement on 7/22/04, no commitments are being communicated to the NRC by this communication, only information of Entergy's present plans.)**

2. For the periodic analyses (performed every 2 years), how are the assumptions and parameters translated into transmission operator guidance to ensure the system is operated within the bounds of the analysis?

   Response:

   Within Entergy, the NPP does not impose artificial constraints on the Transmission Operator. The transmission system is operated per the "Entergy Curtailment Policy and Procedure" which meets the FERC requirements. The NPP ensures that Transmission Operations has modeled the plant correctly, and is applying the proper transmission contingencies to ensure the adequacy of grid in supplying power to the safety related loads. Once the cases are performed by Transmission Operations (on a periodicity specified by the NPP), the NPP reviews the results. If any cases presently or projected do not meet the NPP's requirements, the NPP and Transmission Operator would take action based upon the results to mitigate the problem.

3. Why are the conditions of the switchyard voltages at the plant communicated from your control room operator to the transmission system operator (TSO), who is monitoring the grid voltages rather than from the TSO to your control room operator.

Response:

Entergy Transmission does continuously monitor the overall state of the grid as an entity and also significant load pockets within the grid for "stressed grid" conditions. The Entergy policy entitled, "Entergy Curtailment Policy and Procedure", provides for real time notification of key personnel for several distinct levels of grid conditions, including consideration for the capability of the grid to respond to possible future contingencies, as well as present capability. In addition, River Bend Station has a recorder monitoring the Fancy Point substation voltage as well as the grid frequency in its main control room. In the interest of maximizing grid and plant reliability, an alarm was added to alert the operator if the grid voltage was at an unanticipated voltage prior to reaching the FERC alarm points that would cause the Transmissions Operations Center (TOC) to contact the plant. The first voltage level is currently set below the minimum expected value based on the current system study to alert the operators of abnormal grid conditions. The Low-Low alarm is set above the minimum allowable post trip voltage to allow additional time for operations to change plant lineups placing the plant in the safest condition to cope with grid instability. The alarm provides an early warning to allow RBS to contact the TOC for any information on impending grid problems and the estimation of time until the condition is corrected.

4. With respect to Grid TI question 1, why is there no notification time specified in your agreement?

Response:

There has never been a specific need or requirement for a notification to be formalized in an agreement or contract between the Nuclear and Transmission organizations of Entergy. The Operating Subcommittee, which includes representation by ENS Management, receives notification in a timely manner through an alert system. The ENS Management representative would then contact the control room of the NPP to provide the notification such that appropriate evaluations of grid conditions could occur as they relate to the NPP offsite sources, as applicable.

The periodic analysis incorporate updated grid configurations and conditions, which are projected for future, include such multiple contingencies as the NPP unit trip combined with significant other contingencies to confirm the adequacy of these sources. Since 1992, ENS has had no known events, occurrences or notifications that the bounds of these analyses were not sufficient to substantiate their conclusions, and therefore as stated earlier, there has never been a specific need or requirement for a notification to be formalized in an agreement or contract.

As seen from the above discussion, although there is no formal time when notification must take place, it is understood per the Interface Agreements that the nuclear units have priority when it comes to restoration of offsite power sources.

Entergy Curtailment Policy and Procedure

Revised 7/01/04

Entergy Curtailment Policy and Procedure

Table of Contents

I. Policy

A. Demand reductions (also referred to as load curtailments) are required whenever demand exceeds or is expected to exceed the available power supply. Failure to balance demand and supply could lead to a partial or total collapse of the bulk power system (also referred to as blackout). The purpose of this Policy and Procedure is to provide an orderly and equitable process for reducing customer demand whenever demand reductions are necessary. Entergy considers curtailment a last resort after reasonable alternatives for supplying the demand are exhausted.

B. The goals of Entergy's Curtailment Policy and Procedure are to:

1. Prevent a partial or total collapse of the bulk power system.

2. Prevent damage to equipment due to overload or exposure to other abnormal conditions.

3. Curtail only as much demand as necessary to maintain reliability and comply with North American Electric Reliability Council (NERC), Southwest Power Pool (SPP), and Southeastern Electric Reliability Council (SERC) criteria.

4. Maintain service to high priority customers.

5. Maintain service to Nuclear Plants ensuring power to engineered safety features.

6. Comply with tariff provisions.

7. Comply with contractual commitments.

8. Distribute the demand curtailment burden as equitably as possible.

9. Comply with regulatory reporting requirements.

II. Definitions

A. Projected Shortfall -- A Projected Shortfall is a shortage of supply anticipated to occur more than ten minutes in the future. Projected Shortfalls can become Dynamic Shortfalls if System conditions suddenly worsen.

B. Dynamic Shortfall -- A Dynamic Shortfall is an unanticipated shortage of supply that is immediate or anticipated to occur within less than ten minutes.

C. Systemwide Shortfall -- A Systemwide Shortfall is a shortage of supply that can be relieved by curtailing load anywhere on the System. In Systemwide Shortfalls, all load is eligible for curtailment in accordance with the general curtailment priorities.

D. Local Shortfall -- A Local Shortfall is a shortage of supply in a local area that would cause line overloads or low voltage problems in that area. Only the curtailment of demand in that area can relieve these problems. In Local Shortfalls, certain local loads are subject to curtailment, while loads elsewhere in the Entergy System will not be subject to curtailment, since curtailing those loads would not relieve the local problems.

E. Interruptible/Curtailable Retail Service -- Interruptible Retail Service is load that is directly controlled by Entergy. Curtailable Retail Service is load that is controlled by the customer and that is voluntarily interrupted or curtailed by the customer in compliance with Entergy's curtailment request. Contractual commitments and tariff provisions limit the frequency and duration of interruptions/curtailments of service by Entergy and impose penalties on the customer for non-compliance.

F. Firm Native Load -- Firm Native Load is the demand of retail and full and partial requirements wholesale customers. Firm Native Load has priority over all other demands.

G. EAPS -- EAPS is a retail tariff offered to certain industrial customers. EAPS is "Economic As-Available Power Service". This load is only served when the System sources are available and not needed to serve more firm load.

H. Limited Firm Wholesale Load -- Limited Firm Wholesale Load is wholesale demand served under Federal Energy Regulatory Commission (FERC) approved tariffs that is less firm than Firm Native Load. This load can be curtailed upon 10 minutes' notice.

I. Generator Imbalance Service – Generator Imbalance Service is back-up wholesale service provided to independent generators in the event that the generating unit cannot fully serve its current Wholesale Schedule. Conditional

Imbalance Service is service that is conditional on the power availability of the Entergy System. Reserve Protection Imbalance Service provides a higher level of protection over a "Supplemental Period" (the greater of either 30 minutes or the remainder of the hour). The amount of Reserve Protection received depends on the amount of Supplemental Capacity purchased. During the Supplemental Period, the Supplemental Capacity is treated as firm load and would not be interrupted unless other Entergy firm load is also being interrupted.

III. Responsibility

A. The Entergy Operating Subcommittee (EOS) is responsible for determining the need for load curtailments.

B. In the event the EOS cannot be assembled to consider a Projected Shortfall, or a Dynamic Shortfall develops, the following responsibilities apply:

1. Systemwide Shortfall

a) The Energy Management Organization (EMO) Manager of Energy Management Operations, or the Director of Operations Planning in his absence, shall have the responsibility and authority to order the curtailment of load up to and including Firm Native Load in accordance with this Policy and Procedure.

b) If circumstances are such that the EMO Manager of Energy Management Operations or the Director of Operations Planning are unavailable, the EMO Generation Dispatcher shall have the responsibility and authority to order the curtailment of load up to and including Firm Native Load in accordance with this Policy and Procedure.

2. Local Shortfalls

a) The System Operations Center (SOC) Manager of Transmission System Security, or one of the Security Superintendents in his absence, shall have the responsibility and authority to order the curtailment of load up to and including Firm Native Load in accordance with this Policy and Procedure.

b) If circumstances are such that the SOC Manager of Transmission System Security, or one of the Security Superintendents are unavailable, the SOC Security Supervisor shall have the responsibility and authority to order the curtailment of load up to and including Firm Native Load in accordance with this Policy and Procedure. In the event that the SOC Security Supervisor is unavailable, the Transmission System Operator shall have the responsibility and authority to order curtailment of load up to and including Firm Native Load in accordance with this Policy and Procedure.

c) The EMO is responsible for curtailing and restoring service to non-firm wholesale load, Limited Firm Wholesale Load, and Firm Wholesale Load and declaring the availability/unavailability of power under EAPS.

d) The Transmission Operations Centers (TOCs) and the Major Accounts Team are responsible for curtailing and restoring service to Interruptible/ Curtailable Retail Service.

e) The Distribution Operations Centers (DOCs) are responsible for curtailing and restoring service to Firm Retail Native Load.

IV. General Procedures

A. Systemwide Shortfalls

1. The EMO will determine that there is a Systemwide Shortfall.

2. The EMO will call a meeting of the EOS and report the estimated magnitude, duration, and nature of the Systemwide Shortfall. The meeting will follow the standard agenda provided in Attachment 4.

3. The EOS will determine if curtailments are necessary. The EOS will also determine the appropriate NERC Energy Emergency Alert and the appropriate Entergy Load Risk Alert Level to declare (See Attachment 1).

4. The EOS will develop a "plan" to manage the Projected Shortfall along with potential contingency actions.

5. The EMO will implement the plan.

6. The EMO will:

   a) Declare the unavailability of power serving EAPS load, and curtail non-firm wholesale load, Limited Firm Wholesale Load, and Firm Wholesale Native Load.

   b) Call the SOC to request curtailment of Interruptible/Curtailable Retail Service and Firm Retail Native Load.

   c) Request the SOC to issue an appropriate Emergency Alert pursuant to Policy 9 of NERC Operating Manual.

   d) Obtain the assistance of the office of the Director, Fossil Environmental Support, in seeking emergency removal of any environmental constraints impacting generation levels.

7. The SOC will call the TOCs to request curtailment of Interruptible/Curtailable Retail Service and Firm Retail Native Load.

8. The TOCs will:

   a) Curtail Interruptible/Curtailable Retail Service.

   b) Call the DOCs to request curtailment of Firm Retail Native

Load.

9. The DOCs will curtail Firm Retail Native Load.

B. Local Shortfalls

1. The SOC will determine that there is a Local Shortfall.

2. The SOC will call a meeting of the EOS and report the estimated location, magnitude, duration, and nature of the Local Shortfall.

3. The EOS will determine if curtailments are necessary. The EOS will also determine the appropriate Entergy Load Risk Alert Level to declare (See Attachment 1).

4. The EOS will develop a "plan" to manage the Projected Shortfall along with potential contingency actions.

5. The SOC will implement the plan.

6. The SOC will call the EMO to request the emergency removal of any local environmental constraint impacting local generation, the declaration of unavailability of power to EAPS, and the curtailment of non-firm wholesale load, Limited Firm Wholesale Load, and Firm Wholesale Native Load.

7. The EMO will obtain the assistance of the office of the Director, Fossil Environmental Support, in seeking removal of any local environmental constraint impacting local generation, declare the unavailability of power to EAPS, and curtail non-firm wholesale load, Limited Firm Wholesale Load, and Firm Wholesale Native Load.

8. The SOC will call the TOCs to request curtailment of Interruptible/Curtailable Retail Service and Firm Retail Native Load.

9. The TOCs will:

    a) Curtail Interruptible/Curtailable Retail Service.

    b) Call the DOCs to request curtailment of Firm Retail Native Load.

10. The DOCs will curtail Firm Retail Native Load.

C. Restoration: as conditions warrant, loads are restored in reverse order.

V. Communication

A. Through all abnormal events and situations:

1. The EMO shall maintain timely communication with the SOC.

2. The SOC shall maintain timely communication with the TOCs.

B. The EMO and SOC shall keep the EOS informed via the Alpha paging system of significant events and/or changes to the System.

C. The Distribution representative on the EOS will inform the State Presidents of the nature and expected duration of the Shortfall.

D. The EMO will issue a morning System status report summarizing the nature of the Shortfall and a summary of the contingency plan.

E. The Corporate Communication representative on the EOS will inform various other internal and external audiences of the nature and duration of the shortfall as needed.

VI. Regulatory Reporting

A. If a public appeal is made, the EMO must make appropriate filings with the Department of Energy (DOE), NERC and SERC, with an initial filing within 60 minutes, and more detailed description within 48 hours. See Attachment 3

B. The EMO must report interruption of Firm Native Load due to Systemwide Shortfall to DOE, NERC and SERC, with an initial filing within 60 minutes, and more detailed description within 48 hours. See Attachment 3

C. The SOC must report interruption of Firm Native Load due to Local Shortfall to DOE, NERC and SERC, with an initial filing within 60 minutes, and more detailed description within 48 hours. See Attachment 3

D. The TOC must report the interruption of Firm Native Load immediately to Regulatory Affairs in order to satisfy regulatory reporting requirements.

E. The Regulatory Affairs representative will ensure that the appropriate reports are filed with the respective local, state and federal regulators.

VII. Updating this Policy and Procedure

A. In April of each year, the EOS will review this Policy and Procedure in light of curtailments performed during the prior year and other business changes. Revisions to the procedure will be implemented prior to the upcoming summer. If, during periods outside of the annual April review, other circumstances require a revision of the policy, the EMO will incorporate the change into the text and re-issue the Policy and Procedure. For revisions developed as part of the annual review and for revisions added at other times of the year, the revised Policy and Procedure will be approved by the EOS membership.

B. The Major Accounts Team will be responsible for updating the Interruptible/Curtailable Retail Service customer list.

C. The Wholesale Transactions representative will be responsible for updating the Limited Firm Wholesale Load list.

D. The Distribution representative will be responsible for ensuring an annual review of the circuit priority classifications and the distribution of underfrequency relay loads.

E. The Transmission representative will be responsible for ensuring that load-shedding schedules are updated by the TOCs and DOCs.

VIII. General Priority of Load

A. Entergy's load obligation shall be projected for the next day, current day and calculated on a real-time basis. The load obligation shall be made up of all Firm Native Load, Interruptible/Curtailable Retail Service, Limited Firm Wholesale Load, Generator Imbalance Service, EAPS, and any non-firm wholesale load. In the event of a Projected Shortfall or a Dynamic Shortfall, the specific load to be reduced will be determined in accordance with the following schedule. If a particular step eliminates the necessity for further load reductions, then no additional steps are taken.

B. Non-firm loads (EAPS, Conditional Generator Imbalance Service, and other non-firm wholesale sales) will be reduced first.

C. Interruptible/Curtailable Retail Service and Limited Firm Wholesale Load will be curtailed based on required notice period as set forth below and in Section IX. Table of Interruptible Load/Sales:

1. If a Projected Shortfall is anticipated more than a day in advance, some or all of the day ahead notice Interruptible/Curtailable Retail service customers will be curtailed.

2. If a Projected Shortfall is anticipated more than twelve hours into the future, some or all of the twelve-hour notice Limited Firm Wholesale Load will be curtailed.

3. If a Projected Shortfall is anticipated more than six hours into the future, some or all of the six-hour notice Interruptible/Curtailable Retail Service customers will be curtailed.

4. If a Projected Shortfall is anticipated more than four hours into the future, some or all of the four-hour notice Limited Firm Wholesale Load will be curtailed.

5. If a Projected Shortfall is anticipated more than 2.5 hours into the future, but less than six hours, some or all of the 2.5-hour notice Interruptible/Curtailable Retail Service customers will be curtailed.

6. If a Projected Shortfall is anticipated more than 1.5 hours into the future, but less than 2.5 hours, some or all of the 1.5-hour notice Interruptible/ Curtailable Retail Service customers will be curtailed.

7. If a Projected Shortfall is anticipated more than 30 minutes into the future, but less than 1.5 hours, some or all of the 30 minute notice Interruptible/ Curtailable Retail Service customers will be curtailed.

8. If a Dynamic Shortfall is projected in less than ten minutes, some or all of the 5-minute and No-Notice Interruptible/ Curtailable Retail Service customers, and Limited Firm Wholesale Load customers will be curtailed.

    a) On the first occurrence of a calendar year, the initial curtailment (with size depending on the amount of 5 minute and No Notice Interruptible/Curtailable Retail Service load available) shall come from Limited Firm Wholesale Load customers and the second curtailment shall come from the 5-minute and No-Notice Interruptible/Curtailable Retail Service customers.

    b) On the second occurrence of the calendar year, the first curtailment shall come from the 5-minute and No-Notice Interruptible/ Curtailable Retail Service customers and the second curtailment shall come from Limited Firm customers.

    c) The priority will rotate for each subsequent curtailment.

    d) The Wholesale Load will be curtailed in prioritized order (See Section IX).

D. To the extent possible, Firm Native Load and Generator Imbalance Supplemental Capacity will be curtailed only after all less firm load has been curtailed.

IX. Table of Interruptible Load/Sales

(As of 7/1/04)

Type of Load	Notice	MW
EAPS	1 hour	0
Non-firm Wholesale Load		
Conditional Generator Imbalance Service	No Notice	*
Non-firm Sales	*	*
Limited Firm Wholesale Load		
Reserve Protection Imbalance Service	No Notice	*
SRG&T	10 minute	65
MJMEUC	1.5 hour	35
Hodge	4 hour	30
Interruptible/Curtailable Retail Service		
	No Notice	51
	5 minute	48
	30 minute	109
	1.5 hour	16
	2.5 hour	261
	6 hour	186
	Day Ahead	55

- * Amount and/or notice period is conditional on what load, if any, is being served.

X. Specific Procedures: Non-firm Wholesale, Limited Firm Wholesale, Generator Imbalance Service, and EAPS

The following steps will be used when curtailing and restoring service to non-firm wholesale load, Limited Firm Wholesale Load, and Generator Imbalance Service, and declaring the availability/unavailability of power to EAPS.

1. The EMO will:

    a) Determine which wholesale loads to curtail, and determine the availability of EAPS.

    b) Curtail the identified wholesale loads, and notify the EAPS customers concerning the EAPS availability.

    c) Inform the SOC and the Major Accounts Team of EAPS unavailability.

    d) Inform the SOC that Conditional and, if necessary, Reserve Protection, Generator Imbalance Services will be unavailable.

2. The SOC will inform the TOCs of EAPS unavailability and adjust schedules of load impacted by the unavailability of Generator Imbalance Service.

3. The EMO will notify EAPS customers when availability is restored and resume sales to non-firm wholesale load and Limited Firm Wholesale Load when appropriate.

XI. Specific Procedures: Interruptible Service Retail Customers

The following steps will be used when curtailing and restoring service to Interruptible/ Curtailable Retail Service customers:

1. The Major Accounts Team and the TOCs will:

    a) Determine which load is eligible to relieve the Systemwide or Local Shortfall.

    b) Compare this "eligible load" to recent curtailment records.

    c) Determine which loads to curtail.

    d) Use a customer rotation list to distribute the curtailment burden over the eligible load as equitably as possible and to minimize the number of curtailments.

    e) Comply with tariff provisions and contractual commitments of curtailment notice, frequency and duration whenever possible. Under extreme circumstances, these requirements can be waived.

2. The Major Accounts Team will:

    a) Provide "courtesy calls" to the Interruptible/ Curtailable Retail Service customers informing them of the potential for a curtailment.

    b) Assign a representative to the Beaumont and Gretna TOCs to assist in curtailment efforts and to communicate with others on the Major Accounts Team.

3. The TOC will give the official curtailment notice to the customer.

    a) The TOC will make the initial notification and be the Interruptible/ Curtailable Retail Service point of contact.

    b) The TOC will record:

        (1) Company name

        (2) Name and position of the person notified

        (3) Time and date of the call

(4) Name of the TOC dispatcher making the notification

c) The TOC will use the following script to notify customers of curtailment:

"This is Entergy's (substitute appropriate TOC) Control Center. Because of System conditions, we want you to curtail your electric load to ___ mw by (substitute time – AM/PM) local time today. This Transmission Operation Center will notify you when you are released. If you have any questions, please call your account representative."

d) The TOC will update the Major Accounts Team and EMO.

4. The Major Accounts Team will update Interruptible/Curtailable Retail Service customers during the curtailment.

5. The following steps will be used when releasing Interruptible/ Curtailable Retail Service customers from curtailment:

a) For Systemwide Shortfalls the EMO will:

(1) Determine when curtailments are no longer necessary.

(2) Direct the SOC to release Interruptible/Curtailable Retail Service customers from the curtailment.

b) For Local Shortfalls the SOC will:

(1) Determine when curtailments are no longer necessary.

(2) Direct the TOC to release Interruptible/Curtailable Retail Service customers from the curtailment.

c) The TOCs will use the following script to release Interruptible/Curtailable Retail Service customers from curtailment:

"This is Entergy's (substitute appropriate TOC) Control Center. I am releasing the present curtailment, effective at (time – AM/PM)."

d) The TOCs will notify the Major Accounts Team that Interruptible/Curtailable Retail Service customers have been released.

e) The Industrial Account representatives will interview Interruptible/ Curtailment Retail Service customers on how they were affected and how they recovered from the curtailment.

XII. Specific Procedures: Firm Native Load

The following steps will be used when curtailing and restoring service to Firm Native Load:

1. If Firm Native Load is at risk and if sufficient time is available, the EMO will obtain the assistance of the office of the Director, Fossil Environmental Support, in seeking emergency removal of any environmental constraints impacting generation, and the EOS shall consider the following load conservation alternatives:

    a) Reduce non-essential electric power usage as much as possible at all company offices and facilities.

        1) The TOCs shall direct Entergy Managers to reduce non-essential load.
        2) EMO shall direct Entergy Plant Managers to reduce non-essential load.

    b) EMO shall request that firm wholesale customers (such as cooperative and/or municipals) reduce non-essential electric power usage as much as possible at all their offices and facilities.

    c) The EOS shall consider a "public appeal" to conserve electricity. If a public appeal is recommended, approval by the Executive Vice President, Operations is required. This action has the added benefit of making the public aware of the possibility of rolling outages. For Projected Shortfalls, Corporate Communications will implement its contingency communications plan and use appropriate media to make public appeals to reduce demand. The public may be asked to adjust thermostat settings or reduce non-essential lighting, hot water or electric appliance use. In extreme cases the public may be requested to eliminate all but essential electricity use. Corporate Communications will update the public on the nature and expected duration of the Projected Shortfall. In order to reach as many customers as possible, the Public Appeal should be made the evening before, if at all possible.

    d) If a "public appeal" is approved, the EMO shall request firm wholesale customers (such as cooperative and/or municipals) to implement a similar public appeal to their customers.

e) Retail shall ask large industrial and commercial customers to reduce load as much as possible where such reductions will not pose a risk to public safety or public health, or cause significant equipment damage, or create a significant loss of manufactured product.

2. In the event Firm Native Load is threatened, the EMO Manager of Energy Management Operations will notify and appraise the Senior Vice President, System Planning, the Vice President, Fuels and Generation Operations, the Executive Vice President, Operations, and the EOS of the situation. The Distribution representative will notify and apprise the State Presidents of the System condition. Each EOS member shall be responsible for the prompt notification of appropriate personnel within their organization.

3. If Firm Native Load must be curtailed, it will be according to the following priority order:

   a) Priority Class 3: Circuits that are included in the regular rotation of the load-shed list. These circuits contain customers where loss of circuit does not pose significant risk to health, safety, manufacturing or equipment.

   b) Priority Class 2: Circuits that are included in the load-shed list, but placed in sequence after the Priority Class 3 circuits. These circuits contain critical customers and are included in load-shed to achieve the mandated load-shed percentage. Priority Class 2 circuits serve critical customers with the lowest priority rank available.

   c) Priority Class 1: Circuits that are not included in the load-shed list. These circuits serve critical customers where loss of circuit risks public safety, public health or significant equipment damage (See definition in part e).

   d) Priority Class 0: Circuits that are not included in load-shed because the nature of loads on these circuits will cause additional loss of significant generation or circuits serving customers excluded by contract (such as cooperative and/or municipal wholesale) from manual load-shed. This priority class includes circuits serving energy suppliers to generation stations, all nuclear plants, and may include major distributed generation customers.

   e) Definition of Critical Customers: These are customers where loss of service presents significant risk to public safety, public

health, significant equipment damage, or significant and irreparable loss of manufactured products. This class generally includes major hospitals, regional and international airports, critical fire or police stations, critical water systems, major television/radio broadcast stations, and some major industrial plants. Critical customers will be prioritized as follows:

1. Risks to public safety or public health
2. Significant equipment damage
3. Loss of significant manufactured product

4. If Firm Native Load must be curtailed, it will be according to the following procedure:

a) For Projected Systemwide Shortfalls, EMO will calculate the allocation of firm load curtailments including Generator Imbalance Supplemental Capacity Service among the legal entities, and between wholesale and retail firm load customers. The EMO will allocate the firm load interruptions among wholesale customers and contact those customers. The EMO will notify the SOC of the level of required retail curtailments among the following areas: EAI, EGSI-LA, EGSI-TX, ELI-North, ELI-South, EMI, and ENOI. The EMO is responsible to notify and curtail wholesale load customers. For Projected Local Shortfalls, the SOC will determine the level of required curtailments.

b) The SOC will notify the TOC(s) (one or all depending on the nature of the Shortfall) of the amount of load that needs to be curtailed by each TOC.

c) The TOCs will coordinate with the DOCs to initiate rotating distribution feeder interruptions. These interruptions may be accomplished by automated load shedding programs or through manual means. If SCADA is not functioning properly, the distribution switchman will take instructions directly from the local DOC.

d) For Dynamic Shortfalls where notification time is limited, the TOCs are authorized to take whatever steps are necessary to relieve the Dynamic Shortfall. Such steps can include interrupting, without notice, Interruptible/ Curtailable Retail Service or Firm Native Load depending on the nature and depth of the Dynamic Shortfall. The TOCs will endeavor to provide as much notice as is practicable under the circumstances. The TOCs will endeavor to curtail only the

amount of load necessary to relieve the Dynamic Shortfall. The TOCs, the SOC, and EMO will continuously monitor the situation in real time to minimize the impact of the Dynamic Shortfall. The SOC will notify the EOS of the situation. The Distribution representative will notify the State Presidents of the nature and expected duration of the Dynamic Shortfall.

e) If Operator action is unable to restore the load and generation balance, automatic load shedding will occur. Under frequency relays are installed to automatically interrupt up to 30% of the local summer peak load in successive 10% steps. Feeders of Priority Class 0 and Class 1 are excluded when choosing feeders for under frequency relays. Relays are typically set as follows:

59.3 Hz - 10% load
59.0 Hz - 10% load
58.7 Hz - 10% load

f) The TOCs and DOCs will log any interruption or curtailment action taken. The TOCs and DOCs will record the reasons for curtailment, the feeder numbers, the time, the date, the duration of the curtailment, the load at the time of interruption, and the estimated number of customers affected.

g) Firm Native Load will generally be restored in reverse priority order of curtailment. If under frequency relays have tripped, they must be reset manually.

XIII. Specific Procedures: Dynamic Shortfall Management

The following steps will be used to manage the Area Control Error (ACE), operating reserves, transmission equipment loadings, and System voltages; and to initiate demand curtailments (See Attachment 2):

1. The EMO will constantly monitor ACE, operating reserves, demand trends and supply status.

2. The SOC will constantly monitor transmission equipment loadings and System voltages.

3. The EMO will maintain operating reserves as described in NERC Policy 1, and in accordance with the SPP Reserve Sharing Program.

4. The SOC will maintain transmission equipment loadings and System voltages within safe limits.

5. If supply resources are lost and demand is exceeding supply, the EMO will take the following steps to restore ACE and maintain operating reserve in accordance with NERC policy:

    a) Ramp available generation as soon as possible and declare an Entergy Load Risk Alert Level 1 or 2, as appropriate.

    b) Procure purchased power.

        (1) Purchased power must be procured in sufficient quantity to maintain at least half of the operating reserve as "spinning reserve." If the reserve projection indicates that the System may not have its full reserves the SOC should be called and a NERC Energy Alert Level 1 and an Entergy Load Risk Alert Level 2 should be declared.

        (2) The remaining operating reserve may be in the form of ten-minute or less Interruptible/Curtailment Retail Service or wholesale sales that can be discontinued with ten-minute notice.

c) Use the SPP Reserve Sharing Program to recover from a loss of supply event of a magnitude greater than the SPP reserves being carried.

d) If sufficient generation or purchased power is not available to restore ACE and maintain operating reserve, non-firm loads, Interruptible/Curtailment Retail Service, and Limited Firm Wholesale Load shall be curtailed according to the priorities specified in this Policy and Procedure in Sections VIII and IX to the extent needed. NERC Energy Emergency Alert Level 2 and an Entergy Load Risk Alert Level 2 should be declared when any load is curtailed.

e) If projected reserves cannot be recovered, call the SOC and declare an Entergy Load Risk Alert Level 3. The Entergy Security Coordinator shall broadcast this condition to the entire Eastern Interconnection via the Security Coordinator Information System to seek assistance. EMO continues to seek emergency purchased power. If supply is still lagging demand, the EMO shall call the SOC and declare a NERC Energy Emergency Alert Level 3 and an Entergy Load Risk Alert Level 4. The Entergy Security Coordinator shall broadcast this condition to the entire Eastern Interconnection via the Security Coordinator Information System to seek assistance. This assistance would include requesting operating reserves from other Reliability Council members.

(1) The EMO shall call neighboring utilities to solicit Emergency Service.

(2) The EMO shall use the "Other Extreme Conditions" provision of the SPP Reserve Sharing Program repeatedly. (SPP assistance normally ends in less than an hour. In this situation, another contingency will be entered as soon as the last SPP contingency schedule ends. This process may be continued until resources are exhausted or the shortfall situation has passed).

f) If the frequency is stable and greater than 59.90 Hz and transmission loadings and voltages are within limits, the EMO will continue to seek assistance.

g) If EMO determines that ACE cannot be restored or if the frequency is below 59.90 Hz, or the SOC determines that transmission loadings or voltages are not within limits, Firm

Native Load will be curtailed as specified in this Policy and Procedure.