PJM Reliability Audit of Transmission Owners

(Formerly called the PJM Local Control Center Readiness Audit)

November 2007 (Version 0)  
DRAFT
PJM Reliability Audit of Transmission Owners

Procedure Sections

I. Purpose
II. Background
III. Criteria for Audit
IV. PJM Reliability Audit Procedures
V. Typical Audit Schedule
VI. Transmission Owner Matrix
VII. Neighboring Entity Questionnaires
VIII. Schedule for 2008
IX. Development and Review History

I. Purpose

The purpose of the PJM Reliability Audit is to verify that Transmission Owners within PJM’s footprint satisfy those reliability responsibilities that are shared with PJM including the provision to provide backup services as required. These responsibilities include implementation of directives from PJM as the Transmission Operator, Balancing Authority, Reliability Coordinator, Transmission Planner and Planning Coordinator and include adherence to processes defined in the PJM Manuals as required by the Transmission Owner Agreement and PJM Operating Agreement.

This document describes and defines the process that will be used to conduct PJM Reliability Audits of Transmission Owners. The procedure is designed around the validation of requirements captured in the Transmission Owner Matrix (See Section VI) that identifies PJM-specific requirements in support of PJM’s compliance with NERC reliability standards.

The primary steps in the PJM Reliability Audit Procedure are as follows:
1. Formation of Reliability Audit Review Team
2. Data collection
3. Data review
4. Site visit
5. Report

The Procedure establishes a maximum allowable time of three months to complete the audit process for each individual audit.
II. Background

The reliability of the interconnected system is assured when entities which make up the Interconnection function in accordance with good utility operating practices and satisfy the requirements of NERC and ReliabilityFirst Reliability Standards.

NERC has been performing Readiness Assessments of the Reliability Coordinators, Balancing Authorities, and Transmission Operators that operate in North America since 2004. These Assessments resulted from the investigation of the August 14, 2003 Blackout. Recommendations from the Blackout Report directed NERC to establish a program for reliability readiness audits of Control Areas and Reliability Coordinators. The NERC Assessments identify areas of excellence in operations and areas in need of improvement for ensuring that operators of the bulk electric system have the tools, processes, and procedures in place to operate reliably. These efforts will continue to be the responsibility of the NERC Reliability Readiness Evaluation and Improvement Program.

PJM relies on its Transmission Owners to support many PJM actions. To ensure that the Transmission Owners follow the PJM directives, PJM initiated its own audit process of its Transmission Owners. Originated in 2006, these PJM audits were called Local Control Center (LCC) audits and were focused on readiness. As such, the LCC audits were conducted in conjunction with the NERC Readiness Evaluations of the Transmission Owner. However, through discussions with NERC, ReliabilityFirst, and PJM Members, and consideration of resulting penalties in the industry for non-compliances (effective June 18, 2007), PJM has revised this effort to be a stand-alone process focused on compliance in lieu of readiness.
III. Criteria for Audit

The PJM reliability Audit will evaluate how the Transmission Owner supports PJM with regard to NERC reliability standards and how the Transmission Owner supports PJM as detailed in the PJM Manuals. The Audit will focus its review in seven (7) key areas.

**Operations**
(Relevant Standards: EOP-001, 004, IRO-001, 002, 004, 005, TOP-001, 002, 004, 005, 006, 007, 008, VAR-001, FAC-014, PRC-010, COM-002)
(Relevant Manuals: M-1, M-3, M-5, M-10, M-11, M-12, M-13, M-14, M-36, M-38, and M-40)

**Planning**
(Relevant Standards: FAC-001, 002, 003, 008, 009, 012, and PRC-001, 004, 015, 016, 017)
(Relevant Manuals: M-5 and M-14)

**Information Technology and Data Management**
(Relevant Standards: BAL-005, COM-001, TOP-003)
(Relevant Manuals: M-1, M-13, M-36)

**Operator Training**
(Relevant Standards: PER-001, 002, 003)
(Relevant Manuals: M-1, M-3, M-36, M-40, M-14)

**Voltage Control**
(Relevant Standards: VAR-001, MOD-010, 012, 018, 019, 020, 021)
(Relevant Manuals: M-3, M-13, and M-14)

**Maintenance/Testing**
(Relevant Standards: PRC-005, 008, 009, 011, 017)
(Relevant Manuals: M-3)

**Load Shed/System Restoration/Blackstart**
(Relevant Standards: PRC-007, 018, 021, 022, EOP-003, 005, 008)
(Relevant Manuals: M-5 & M-13)

The primary function of the PJM Reliability Audit will be to evaluate how the Transmission Owners support PJM. The principal tool to be used by the audit team will be the Transmission Owners Matrix which incorporates the NERC Reliability Standards with questions which the audit team will ask the Transmission Owner to show how the Transmission Owner supports PJM in achieving the requirements in the NERC standards. In addition to the matrix questions, the audit team will also explore these seven key activity areas noted above. The audit team will require the Transmission Owners to provide demonstrations of their capabilities in selected areas of operation, planning, and training.
Within the seven (7) key areas, the audit team will explore topics such as:

**Operations**

**Security:** The Transmission Owner needs to have adequate physical and cyber security plans. The review team would like to walk around the TO control center to see what physical security system exists, how access is controlled into the control room; the computer room; telecommunication facilities; etc. to ensure that information being sent to PJM is secure.

**Authority:** Where does the ultimate authority for transmission reliability reside? The Audit Team will ask the Transmission Owner to show their documentation that would demonstrate their authority to implement emergency procedures and actions which PJM has directed. To assist the Audit Team the Transmission Owner will be asked to provide the team with job descriptions identifying their authority.

**Real-time Monitoring:** The Transmission Owner is required to have meters on all tie lines with adjacent Transmission Operators to record actual interchange (MW) in real time and to also have monitoring on all ReliabilityFirst defined Bulk Electric System (BES) facilities within the Transmission Owner area. The Transmission Owner is also required to have adequate monitoring of its own facilities and of adjacent TO facilities that have an effect of the Transmission Owner. The Transmission Owner will be asked to demonstrate their EMS capability and also to demonstrate visualization capabilities. To assist the review team, the Transmission Owner will be asked to provide an overview of its systems including State Estimation, Security Analysis, and advanced applications. The Transmission Owner will be asked to describe their process for resolving actual and contingency problems including how differences between PJM and the Transmission Owner are resolved.

**Delegation of Authority:** Any delegated tasks that PJM has assigned to the Transmission Owner must be clearly documented. Has PJM delegated any operational or planning tasks to you as the Transmission Owner? Describe any tasks that have been delegated by PJM. Also describe any task delegated by the Transmission Owner to others.

**Capacity and Energy Emergency Plan:** The PJM Transmission Operator needs to have emergency plans that are coordinated with its Transmission Owner. Describe your emergency procedures and how these plans are coordinated with PJM? Under what circumstances can you as the Transmission owner implement your plans without PJM approval? Demonstrate your implementation of the emergency procedures via your EMS. Demonstrate your load shedding capability and voltage reduction process.

**Operating Policies and Operating Procedures:** The PJM Transmission Operator needs to ensure that its procedures are in alignment with those of the Transmission Owner. Describe your operating procedures and how they are coordinated with the PJM procedures. How do your operators access your procedures and those of PJM?
Planning

**Long Term Planning:** The Transmission Owner needs to provide information to the Planning Coordinator and the Transmission Planner so that long term system analyses can be performed. Describe the process used to supply the required information to PJM. Are any internal studies performed and shared with PJM?

**Short Term Planning:** The Transmission Owner needs to participate in short term studies by supplying system information and planned outage information to PJM. Describe the process used to supply the required information to PJM. Are any internal studies performed and shared with PJM?

**Operational Planning:** The Transmission Owner needs to perform sufficient operational planning studies to ensure the reliability of its local system. Show the review team your studies from yesterday. Show us your outage request process. Demonstrate your process for outage analysis.

Information Technology and Data Management

**Communications:** The Transmission Owner needs to have adequate and reliable communication facilities to assure the exchange of information necessary to maintain Interconnection reliability. Please demonstrate your communication systems including failover systems. Demonstrate failed data and its status is provided to the TO operators and PJM. Demonstrate your alarm processing systems.

**Outage Coordination:** The Transmission Owner needs to coordinate its maintenance and protective relaying outages that may affect reliability and other systems with those other systems and the Transmission Operator. Describe the outage reporting and coordination process that is used by the TO.

Operator Training

**Training:** The transmission Owner needs to have adequate training programs in place. Please provide your training records for the current operators on-shift. Provide details and course materials for your simulator training programs. Demonstrate the simulator if you have one. Provide documentation about all your system operations training programs. Provide training instructor guidelines and provide a training module with course objectives and testing.

**Staff Certification:** The Transmission Owner’s Center shall be operated by PJM-certified system operators 24 hours per day, seven days per week. Provide the operator records demonstrating compliance with this requirement.
Voltage Control

**Nuclear Power Interaction:** The Transmission Owner needs to have operating procedures for voltage control and off-site power source requirements at Nuclear Power Plant buses as required by licensing. Describe your procedures.

**Operating Policies and Operating Procedures:** The Transmission Owner needs to ensure that its procedures are in alignment with those of PJM as the Transmission Operator. Where are your TO voltage operating policies? How is your voltage control program implemented?

**Maintenance/Testing**

**Equipment Maintenance and Testing:** The Transmission Owner needs to have adequate equipment maintenance and testing plans to assure the reliability of the transmission system. Describe your equipment maintenance and testing procedures.

Load Shed/System Restoration/Blackstart

**System Restoration.** The Transmission Owner needs to have a restoration plan to reestablish its electric system and cover emergency conditions. Describe your restoration plan. Describe your relationships with PJM. Provide training records for all your operators. How do you validate your restoration Plan? How often are drills performed?

**Nuclear Power Interaction:** The Transmission Owner needs to have emergency and restoration plans that ensure the safe shut down and restart of nuclear generation. Describe your procedures concerning any nuclear plants in your TO area. How are outages coordinated so that off-site power requirements are never violated? Describe your communication protocols with the nuclear plants and with PJM on nuclear concerns. Discuss awareness to specific nuclear power plant bus voltage requirements.

**Back-up Control Center:** The Transmission Owner needs to provide a plan to continue operation in the event its control center becomes inoperable. Describe your back-up system. How often is the facility tested? Provide records about the testing and which operators have been drilled at the back-up facility during the past year.

**Demonstrations by TO**

- Data transmittals between the Transmission Owner and PJM
- TO Monitoring capability (EMS, map-boards, security analysis applications, etc.)
- Back-up Facility
- Computer system security
- Fire security
- Communication systems
- Training systems and processes
IV. PJM Reliability Audit Procedure

Scheduling

1. Approximately once every three years PJM will perform an audit of each Transmission Owner within PJM’s footprint. Effort will be taken to coordinate this review effort with NERC Readiness Evaluations and/or to accommodate Transmission Owner preferences with regard to scheduling.

2. Scheduling options include:
   2.1. The PJM Reliability Audit may be performed shortly in advance of the NERC Readiness Evaluation in order to utilize the documentation each Transmission Owner will be required to prepare and submit to NERC. This will reduce the preparation and documentation burden of each Transmission Owner for supporting the PJM Reliability Audit and may provide the Transmission Owner insight that will be useful in preparing for the onsite portion of the NERC Readiness Evaluation.
   2.2. The PJM Reliability Audit may be performed well in advance of the NERC Readiness Evaluation. This may allow the Transmission Owner to gain insight that will be useful in preparation of the documentation for the NERC evaluation.
   2.3. The PJM Reliability Audit may be performed shortly after the NERC Readiness Evaluation. This will again allow the PJM team to utilize material prepared for the NERC evaluation and will reduce the preparation and documentation burden of each Transmission Owner.

Every effort will be made to accommodate the Transmission Owner’s preference while maintaining a balanced workload for PJM staff throughout the three-year audit cycle.

3. At the beginning of each year, PJM will send a questionnaire to the neighboring operating entities with whom the entities to be audited in that year routinely interact. These questionnaires are to be completed and returned within thirty days of receipt.

4. The PJM NERC and Regional Coordination Department will be the contact group for all questions regarding PJM Reliability Audits as well as maintenance of such program documents and staffing of the PJM audit teams.

5. The PJM NERC and Regional Coordination Department will solicit the Operating Committee for volunteers to participate in PJM Reliability Audits.

6. To the extent possible, members of PJM staff will participate in each of the NERC Readiness Evaluations of Transmission Owners within the PJM footprint.

7. The PJM Reliability Audit Team will be led by a representative of the NERC and Regional Coordination Department and team members will typically consist of the following:
   - Representative from the PJM Operations Department
   - Representative from the PJM Transmission Planning Organization
   - Representative from another Transmission Operator Organization
   - Representative from another Transmission Owner (including those from another RTO/ISO)
8. All PJM Reliability Audit Team members will be agreed to by the Transmission Owner being reviewed, and will subject themselves to confidentiality agreements for any data that is made available to them through during the audit review process.

Pre-Audit
9. An initial letter will be sent to the entity being audited at least sixty days prior to the audit requesting the Transmission Owner to respond to the questions contained in the Transmission Owner Matrix.

10. The entity will have thirty days to provide the requested information and the completed questionnaire. Where information requested by PJM is contained in material prepared for a NERC Readiness Evaluation, the entity may provide a copy of the NERC documentation to PJM.

11. The Neighboring Entity questionnaires (which were sent out at the beginning of the year) will be reviewed for latency. The neighboring entities will also be contacted to ensure that the questionnaires are still accurate. If necessary the neighboring entities may be requested to revise their submitted questionnaires.

12. All audit team members must sign and abide by a PJM confidentiality agreement.

13. Copies of the signed confidentiality agreements will be maintained by the PJM Legal Department and be available upon request by the audited entity.

14. The PJM NERC and Regional Coordination Department will provide the team members with the following information upon receipt of the signed confidentiality agreements, and as soon as practicable prior to the audit:
   - The entity’s completed questionnaire and electronic versions of any supporting documents sent by the entity to be audited
   - The neighboring operating entities’ completed questionnaires
   - The on-site audit agenda and an agenda for the pre-audit team meeting

15. The PJM NERC and Regional Coordination Department will contact the Transmission Owner to be audited and to the audit team as a reminder of the planned effort seven calendar days prior to the on site audit.

16. Travel arrangements and confirmation of accommodation will be the responsibility of each audit team member.

On-Site Visit
17. The audit team may meet but efforts will be made to accommodate either a team conference call or WebEx Session prior to the on-site audit begins to review questionnaire responses, identify areas requiring further investigation, discuss concerns, coordinate the interview process, and assign responsibilities during the on-site visit.
18. The schedule of onsite activities will generally follow the example provided in Section V. Adjustments will be made to ensure efficient use of the audited entities' staff members' time.

19. The audit team will formulate its evaluation and any recommendations for changes based strictly on data collected from the responses supplied from the questions contained in the Transmission Owners Matrix, and from observations and information collected during an on-site visit to the Transmission Owner facility.

20. During the on-site visit to the Transmission Owner's control center facility, the Review Team members will:
   - Review with the Transmission Owners the data collected through the questionnaires;
   - Interview the Transmission Owners' operations and management personnel;
   - Inspect the Transmission Owners' facilities and equipment; and
   - Review all necessary documents and data.

Audit Report

21. Upon completion of the on-site audit, the audit team will give the entity a presentation of preliminary findings that will be included in the audit report.

22. A draft audit report will be prepared by the Team Leader and provided to the audit team for comments. Audit team members will be requested to provide comments within one week of receipt of the draft report.

23. The Team Leader will send the audited entity a draft report for review approximately 30 business days after the onsite visit. The Transmission Owner will be requested to provide comments on the reports within two weeks upon receipt of the draft report from PJM.

24. The PJM NERC and Regional Coordination Department will be responsible for following up on all findings respective of non-adherence with the PJM Manuals and for tracking the implementation of all changes.

25. The audit report will not be publicly disclosed. It will remain confidential between PJM and the audited entity. Audit team members will be requested to destroy all audit-related material upon issuance of the final report.

Annual Review of Findings

26. Annually, PJM staff will review generic findings, including lessons learned and good practices, with the PJM Operating Committee. Findings will be presented in generic fashion with no company-specific information revealed. Affected companies are free to share their own information if they so desire.
### V. Typical Audit Schedule

<table>
<thead>
<tr>
<th>Time</th>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 – 8:30</td>
<td>Travel in morning</td>
<td>Operations</td>
<td>Load Shedding &amp; Restoration</td>
</tr>
<tr>
<td>8:30 – 9:00</td>
<td></td>
<td>Audit Team Interviews TO about operation standards (IRO, TOP, FAC, PRC, COM)</td>
<td>Sub-audit team on BUCC &amp; System restoration (EOP, PRC)</td>
</tr>
<tr>
<td>9:00 – 9:30</td>
<td></td>
<td>Operations (cont.) &amp; Voltage Control Sub-audit team on Operations and Emergency Procedures (TOP, VAR, EOP, MOD)</td>
<td>Planning (cont.) &amp; Maint./Testing Sub-audit team on Planning and Planning Tools (PRC, FAC, MOD)</td>
</tr>
<tr>
<td>9:30 – 10:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:00 – 10:30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:30 – 11:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:00 – 11:30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:30 – 12:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:00 – 12:30</td>
<td></td>
<td>Lunch</td>
<td>Lunch</td>
</tr>
<tr>
<td>12:30 – 1:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1:00 – 1:30</td>
<td>TO Management Overview Review and adjust Schedule with TO</td>
<td>IT/ Data Management Sub-audit team on IT communication and facilities. (COM, BAL, TOP)</td>
<td>PJM Audit team asks follow-up questions</td>
</tr>
<tr>
<td>1:30 – 2:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2:00 – 2:30</td>
<td></td>
<td>Operator Training Sub-audit team on Certification and Training. (PER)</td>
<td>PJM Audit Team meets privately &amp; develops recommendations</td>
</tr>
<tr>
<td>2:30 – 3:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3:00 – 3:30</td>
<td></td>
<td></td>
<td>De-brief session with TO</td>
</tr>
<tr>
<td>3:30 – 4:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4:00 – 4:30</td>
<td>PJM Audit Team meets privately</td>
<td>PJM Audit Team meets privately</td>
<td></td>
</tr>
<tr>
<td>4:30 – 5:00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
VI. Transmission Owner Matrix

The Transmission Owner matrix was developed to show those NERC standards (and their associated requirements) which require the PJM Transmission Owners to support PJM activities. The Matrix provides the questions that the audit team will expect responses to either prior to the audit or at the actual audit. The audit team will use this information to evaluate compliance with the NERC standards or compliance with the PJM Manuals.

The duties and responsibilities of PJM and its member companies are defined in the PJM Operating Agreement (OA), the Transmission Owners Agreement (TOA), the Open Access Transmission Tariff (OATT) and various PJM Manuals. PJM has the responsibility for planning and directing the operation of PJM Transmission Facilities in accordance with applicable NERC, Regional, and PJM standards.

The Transmission Owner Matrix includes requirements from the NERC Standards that apply to the TO functions. This matrix applies only to the facilities for which PJM is the registered TOP and TP. The Matrix shows the tasks performed by the Member TO in order for PJM to fulfill the requirements and cites the specific agreement or manual where those tasks are prescribed and also provides questions that will be asked during the PJM Reliability Audit to show how the TO supports PJM with regard to the NERC standards. The Matrix does not create any new obligations for PJM or its members, but is simply a cross-reference to indicate where the assignment of various reliability tasks is documented.

Both PJM and its Member companies have many obligations under the NERC standards that are not included in the Matrix. The scope of this document is limited to the TP, TOP and TO functions based on the unique relationship between PJM and its Member TOs under the TOA. It is not intended to define assigned or supporting responsibilities for the other functional model entities. PJM accepts the accountability for the requirements for BA, PC, RC, and RP in their entirety, with no assignment of any of these requirements back to the member transmission owners. However, in performing these other functions, PJM may require support from the registered Distribution Provider, Load Serving Entity, Purchasing/Selling Entity, Generation Owner, Generation Operator, and others within PJM. Nothing within this document or the attached matrix relieves a PJM member of their responsibilities under the OA, TOA, or PJM Manuals.

The Matrix and the supporting Reference Guide are posted on the Compliance Page of the PJM website.
VII. Neighboring Entity Questionnaires

Neighboring Transmission Owner Questionnaire

Transmission Owner: _________________________

TRANSMISSION OWNER being audited _______________

Response due to PJM by: ______________

The TRANSMISSION OWNER named above is being reviewed as part of the PJM Reliability Audit Program. Please assist PJM in its review of this TRANSMISSION OWNERʼS qualification by filling out the following questionnaire.

You are requested to provide candid responses to the following questions. Please return answers to these questions by the date specified above. You may use this form to provide your answers. For questions where additional support documentation is necessary to verify your response, please so indicate and include the location of such documents.

Upon completion, please sign and date this form and return it to:

PJM Interconnection
955 Jefferson Ave.
Norristown, PA 19403
Attn: Leanne Harrison

1. Have you and the TRANSMISSION OWNER determined and agreed to the points of interconnection between your two systems? Please list the points of interconnection. How are new interconnections coordinated, planned and facilities installed?

Response:

2. Have you and the TRANSMISSION OWNER determined and agreed to the communication facilities required between your system operators to assure the exchange of information necessary to maintain Interconnection reliability? Please describe.

Response:

3. Have you and the TRANSMISSION OWNER agreed how your tie lines will be operated, taken in and out of service for routine maintenance, emergency switching, etc. including
notification procedures with the Transmission Operators and Reliability Coordinators. Explain how reliability issues will be communicated and evaluated.

Response:

4. Have you and the TRANSMISSION OWNER agreed to how the transmission systems will be restored if a Blackout occurred in your TRANSMISSION OWNER area? What assistance would you offer to your neighboring TO? Have you exchanged restoration procedures and trained your operators in both your procedures and the neighboring Transmission Owner’s procedures.

Response:

5. Have you communicated to the TRANSMISSION OWNER any voltage control operating procedures, stability transfer limits, or any other operating problems that could affect their TRANSMISSION OWNER area? Are you confident that the TRANSMISSION OWNER understands its Transmission obligations with regard to these issues?

Response:

6. Have you and the TRANSMISSION OWNER established any special procedures for coordinating special protection schemes, establishment of ratings on ties, or for new facility interconnections?

Response:

7. Please describe any other operating or planning issues you feel are pertinent to the TRANSMISSION OWNER?

Response:

Date: _____________
Transmission Owner’s Operations Manager: _________________________
PJM Transmission Operator Questionnaire

Transmission Operator: ___________________

TRANSMISSION OWNER: ________________

Response due by: ________________

The TRANSMISSION OWNER named above is being reviewed as part of the PJM Reliability Audit Program. Please assist PJM in its review of this TRANSMISSION OWNER'S qualifications by filling out the following questionnaire.

You are requested to provide candid responses to the following questions. Please return answers to these questions by the date specified above. You may use this form to provide your answers. For questions where additional support documentation is necessary to verify your response, please so indicate and include the location of such documents.

Upon completion, please sign and date this form and return it to:

PJM Interconnection
955 Jefferson Ave.
Norristown, PA 19403
Attn: Leanne Harrison

1. Have you and the TRANSMISSION OWNER determined and agreed to the transmission facilities that will be monitored by the PJM Transmission Operator? Will all ReliabilityFirst defined Bulk Electric System (BES) facilities be monitored by both the TRANSMISSION OWNER and the Transmission Operator?

   Response:

2. Have you and the TRANSMISSION OWNER determined and agreed to the communication facilities required between your Operating Center and the Transmission Operator to assure the exchange of information necessary to maintain Interconnection reliability? Please describe.

   Response:

3. Have you and the TRANSMISSION OWNER agreed how the transmission systems (both the transmission operators and the TRANSMISSION OWNER) will be operated, including the scheduling of transmission for routine maintenance, emergency switching, etc. Explain how reliability issues will be evaluated.

   Response:
4. Have you and the TRANSMISSION OWNER agreed to how the transmission systems will be restored if a Blackout occurred in the TRANSMISSION OWNER area. Have you exchanged restoration procedures and trained your operators in both your procedures and the Transmission Operator procedures.

Response:

5. Have you communicated to the TRANSMISSION OWNER any voltage control operating procedures, stability transfer limits, or any other operating problems that could affect their TRANSMISSION OWNER area? Are you confident that the TRANSMISSION OWNER understands its obligations with regard to these issues?

Response:

6. Have you and the TRANSMISSION OWNER established any special procedures for coordinating special protection schemes, establishment of ratings, or for new facility interconnections?

Response:

7. Have you and the TRANSMISSION OWNER established any special procedures for coordinating system studies including collection of data needed for operations or planning?

Response:

8. Please describe any other operating or planning issues you feel are pertinent to the TRANSMISSION OWNER?

Response:

Date: _____________________

Transmission Operator’s Operation Manager ____________________
### VIII. Schedule for 2008

<table>
<thead>
<tr>
<th>Week Beginning</th>
<th>Audit 1</th>
<th>Audit 2</th>
<th>Audit 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 2008 and every three years thereafter</td>
<td>Send out Neighboring Entity Questionnaires to all TO and TOP Planned to be Auditied in 2008</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jan. to June Of each year</td>
<td>Solicit Volunteers Based on published NERC schedule</td>
<td></td>
<td></td>
</tr>
<tr>
<td>July 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>July 14</td>
<td>Send letters to TO along with link to questionnaire</td>
<td></td>
<td></td>
</tr>
<tr>
<td>July 21</td>
<td>Select Team members</td>
<td></td>
<td></td>
</tr>
<tr>
<td>July 28</td>
<td>PJM reviews the Neighboring entity questionnaires</td>
<td>Send letters to TO along with link to questionnaire</td>
<td></td>
</tr>
<tr>
<td>August 4</td>
<td>PJM contacts questionnaire source to confirm information</td>
<td>PJM sends back questionnaire</td>
<td>Select Team members</td>
</tr>
<tr>
<td>August 11</td>
<td>TO sends back questionnaire</td>
<td>PJM reviews the Neighboring entity questionnaires</td>
<td></td>
</tr>
<tr>
<td>August 18</td>
<td>PJM sends out information to the audit team</td>
<td>PJM sends out information to the audit team</td>
<td>Select Team members</td>
</tr>
<tr>
<td>August 25</td>
<td>Team reviews information prior to audit</td>
<td>PJM contacts questionnaire source to confirm information</td>
<td></td>
</tr>
<tr>
<td>September 1</td>
<td>Team reviews information prior to audit</td>
<td>TO sends back questionnaire</td>
<td>PJM sends out information to the audit team</td>
</tr>
<tr>
<td>September 8</td>
<td>PJM sends out reminder to TO</td>
<td>Select Team members</td>
<td></td>
</tr>
<tr>
<td>September 15</td>
<td>Conduct Audit 1</td>
<td>Team reviews information prior to audit</td>
<td>PJM reviews the Neighboring entity questionnaires</td>
</tr>
<tr>
<td>September 22</td>
<td>Report writing</td>
<td>Team reviews information prior to audit</td>
<td>PJM contacts questionnaire source to confirm information</td>
</tr>
<tr>
<td>September 29</td>
<td>Report writing</td>
<td>PJM sends out reminder to TO</td>
<td>TO sends back questionnaire</td>
</tr>
<tr>
<td>October 6</td>
<td>Report writing</td>
<td>Conduct Audit 2</td>
<td>PJM sends out information to the audit team</td>
</tr>
<tr>
<td>October 13</td>
<td>Initial PJM Report prepared and sent to TO</td>
<td>Report writing</td>
<td>Team reviews information prior to audit</td>
</tr>
<tr>
<td>October 20</td>
<td>Report writing</td>
<td>Report writing</td>
<td>Team reviews information prior to audit</td>
</tr>
<tr>
<td>October 27</td>
<td>TO provides comments on Report to PJM</td>
<td>Report writing</td>
<td>PJM sends out reminder to TO</td>
</tr>
<tr>
<td>November 3</td>
<td>Initial PJM Report prepared and sent to TO</td>
<td>Report writing</td>
<td>Conduct Audit 3</td>
</tr>
<tr>
<td>November 10</td>
<td>PJM will prepare final report and issue to the TO</td>
<td>Report writing</td>
<td></td>
</tr>
<tr>
<td>November 17</td>
<td>TO provides comments on Report to PJM</td>
<td>Report writing</td>
<td></td>
</tr>
<tr>
<td>November 24</td>
<td>Report writing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>December 1</td>
<td>PJM will prepare final report and issue to the TO</td>
<td>Initial PJM Report prepared and sent to TO</td>
<td></td>
</tr>
<tr>
<td>December 8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>December 15</td>
<td>TO provides comments on Report to PJM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>December 22</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>December 29</td>
<td>PJM will prepare final report and issue to the TO</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comment [A1]: I don’t think this much detail is needed – perhaps just show the companies on whom we propose to conduct audits, insert their NERC eval dates and put the PJM audit date as TBD.
# IX. Development and Review History

<table>
<thead>
<tr>
<th>Revision</th>
<th>Effective Date</th>
<th>Writer</th>
<th>Reviewer</th>
<th>Approver</th>
<th>Reason Written</th>
<th>Next Review Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>11/27/07</td>
<td>Leanne Harrison, Sr. Engineer, NERC &amp; Regional Coordination Dept.</td>
<td>Joe Willson, Sr. Consultant, PJM</td>
<td>Alicia Daugherty, Manager, NERC &amp; Regional Coordination Dept.</td>
<td>Complete re-write of former LCC Audit Program/Procedure rewritten to focus on compliance instead of reliability consistent with PJM Manuals, NERC and Regional Entity standards.</td>
<td>11/27/08</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revision 3</td>
<td>Effective Date:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>----------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Writer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reviewer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approver</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reason Written</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Next Review Due Date</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Revision 4</th>
<th>Effective Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writer</td>
<td></td>
</tr>
<tr>
<td>Reviewer</td>
<td></td>
</tr>
<tr>
<td>Approver</td>
<td></td>
</tr>
<tr>
<td>Reason Written</td>
<td></td>
</tr>
<tr>
<td><strong>Next Review Due Date</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Revision 5</th>
<th>Effective Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writer</td>
<td></td>
</tr>
<tr>
<td>Reviewer</td>
<td></td>
</tr>
<tr>
<td>Approver</td>
<td></td>
</tr>
<tr>
<td>Reason Written</td>
<td></td>
</tr>
<tr>
<td><strong>Next Review Due Date</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Revision 6</th>
<th>Effective Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writer</td>
<td></td>
</tr>
<tr>
<td>Reviewer</td>
<td></td>
</tr>
<tr>
<td>Approver</td>
<td></td>
</tr>
<tr>
<td>Reason Written</td>
<td></td>
</tr>
<tr>
<td><strong>Next Review Due Date</strong></td>
<td></td>
</tr>
</tbody>
</table>