

INDEPENDENT ELECTRICITY SYSTEM OPERATOR (IESO) 2007 RELIABILITY COMPLIANCE FILING FOR THE ONTARIO ENERGY BOARD

This report summarizes the significant actions the IESO undertook in 2007 with respect to reliability, and its activities in regard to the development of reliability standards and criteria, as well as the work it undertook in 2007 in cooperation with standards authorities outside of Ontario. This report is prepared and filed pursuant to section 6.2(f) of the IESO license.

The IESO fulfills its roles and responsibilities with respect to ensuring reliability a number of ways, including:

- Administering and enforcing the reliability compliance program in Ontario pursuant to the *Electricity Act, 1998* and the Ontario Market Rules;
- Operating as the Reliability Coordinator and Balancing Authority for Ontario, and as a member of the Northeast Power Coordinating Council (NPCC) and the North American Electric Reliability Corporation (NERC). The IESO has adopted the NERC and NPCC reliability standards and has the authority to set additional standards and criteria in Ontario when necessary. These activities are supported by the IESO's Memorandum or Understanding (MOU) with NERC, NPCC and NPCC CBRE which sets out the obligations of the signatories, and compliments the MOU between the Ontario Energy Board (OEB) and NERC; and
- Participating in various industry forums for the development and administration of reliability standards that deal with real-time operating and planning activities.

A. LEGISLATIVE, REGULATORY AND INDUSTRY DEVELOPMENTS

1. Advocacy and Influence

The *Electricity Act, 1998*, the OEB License and the IESO Market Rules all provide the IESO with authority to advocate on behalf of Ontario reliability related discussions and decisions, and to ensure that the IESO is able to fulfill its legislative and license obligations respecting the maintenance of the IESO controlled grid and the IESO administered markets.

The IESO meets these obligations through its interactions with government agencies and through the support it provides at OEB proceedings. The IESO also advocates and influences the development of standards to ensure that Ontario's interests are preserved in the broader North American interconnected systems. Advocacy is an essential part of the IESO's reliability related activities and is supported by IESO management and staff.

2. Ontario Energy Board

i. Leave to Construct Proceedings

The IESO continued to be actively involved in the regulatory review and approval of proposed new or modified connections to the IESO-controlled grid, through the identification of the need for new or modified connections, and through the provision of technical support to the OEB and stakeholders.

In 2007, the IESO assisted Hydro One in securing the Board's leave to commence reinforcement of the transmission system to address reliability concerns identified earlier by the IESO, including construction of the new Hurontario switching station and other system reinforcements in the Brampton and Woodstock areas. The IESO also assisted in facilitating new wind generation connections to the IESO-controlled grid. The IESO is also working with Hydro One and the Ontario Power Authority (OPA) to obtain the Board's leave to construct the Bruce to Milton 500 kV transmission line and associated facilities.

ii. Integrated Power System Plan (IPSP)

Throughout 2007, the IESO provided significant assistance and support to the OPA in the development of its application and pre-filed evidence for its 20 year Integrated Power System Plan (IPSP), including the preparation of a considerable amount of the written evidentiary material. In August of 2007, the OPA filed with the OEB its IPSP for review and approval. The IESO is expected to be fully engaged in the preliminary and oral phases of the proceeding. (See Part B for more on the IESO's involvement with the IPSP)

iii. Lennox Reliability Must Run Contracts

In prior years, the IESO conducted technical assessments to determine whether for reliability reasons, a need existed for the continued operation of the Lennox generating station. The IESO assessment, which considered anticipated conditions and load growth, showed that the continued operation of Lennox was necessary. The IESO then entered into a year long "must run" contract with Ontario Power Generation for Lennox. As party to the 2007 – 2008 Lennox Must Run agreement, the IESO was actively involved in the OEB proceedings in review of the contract.

3. North American Electric Reliability Corporation (NERC) and Northeast Power Coordinating Council (NPCC)

Through daily interactions, the IESO continues to maintain and advance positive relations with NERC and NPCC. The IESO provided continuing support and made significant contributions to NERC in its evolution as the Electricity Reliability Organization.

IESO was also involved with NERC on a number of significant projects in 2007. The IESO was extensively involved in developing Version 4 of the NERC Functional Model. The functional model defines the tasks of the responsible entities and the classes of organizations that are specified in NERCs reliability standards.

The IESO also worked to modify a key NERC 2008-13 Strategic Plan objective. As a result of IESO advocacy, NERC agreed to change their 'relationships' objective to focus on comparable and not prescriptive enforceability across North America. This concession by NERC is an acknowledgement of the IESO's existing compliance framework.

In 2007, IESO representatives were elected to both the NERC Members Representative Committee (MRC) and the NPCC Board Executive Committee.

4. Federal Energy Regulatory Commission (FERC)

On June 18, 2007, 83 of the original 107 NERC reliability standards became mandatory and enforceable in the U.S. All NERC standards have been mandatory and enforceable in Ontario since market opening in May 2002.

The IESO continued to be active in providing comments in response to the various Notices of Proposed Rulemaking (NOPR), issued by the U.S. Federal Energy Regulatory Commission (FERC) including NERC's new Cyber Security reliability standards and modified Facility standards dealing with System Operating Limits. The IESO also provided comments to NERC on changes to data requests because of a FERC order requiring NERC to clarify its authority in the United States to obtain reliability related data from users, owners and operators of the Bulk Power System as directed by FERC.

The IESO's regulatory submissions to FERC are available on the IESO website at <http://www.ieso.ca/imoweb/corp/regulatory.asp>.

5. U.S. Department of Energy (DOE)

The IESO met with U.S. DOE staff to discuss the process and results of the National Interest Electric Transmission Corridors (NEITC) designations. The DOE agreed to continue the involvement of the IESO in next congestion studies due in August 2009.

6. National Energy Board (NEB)

The IESO presented Ontario's reliability and compliance framework to NEB staff with the assistance of OEB staff. This effort solidified the NEB staff's understanding that any future regulations regarding mandatory NERC reliability standards for International Power Lines should avoid duplicating effective provincial processes or authorities that include International Power Lines.

7. Smart Metering

Pursuant to Ontario Regulation 393/07 made under the *Electricity Act, 1998*, the IESO has been designated as the Smart Metering Entity (“SME”) for Ontario. The SME is the organization that is mandated by law to assist in the facilitation of the goals of the Smart Metering Initiative (SMI). The SMI is part of the Government of Ontario’s initiative to create a conservation culture and provide a valuable tool-set for demand management programs thereby reducing system stress which in turn strengthens grid reliability.

B. IESO MARKET AND SYSTEM RELATED ACTIVITIES

1. Ontario Reliability Reports (ORO)

In February 2006, the IESO introduced the Ontario Reliability Outlook (ORO) as a means of highlighting the IESO’s contribution to reliability and to draw attention to reliability issues and concerns that needed to be addressed by others. Through regular issues of the ORO, the IESO reports on progress of the inter-related generation, transmission and conservation projects underway to meet future reliability requirements and identifies necessary plans to meet changing conditions.

In the March 2007 and December 2007 publications of the ORO, the timely implementation of new transmission facilities were identified as essential to addressing future reliability needs. The ORO will continue to monitor and report on the progress of infrastructure developments and their impact on future reliability.

The IESO will also be actively monitoring progress on all aspects of the coal replacement program and the supporting transmission infrastructure to ensure that reliability can be maintained. The OROs may be found at <http://www.ieso.ca/imoweb/monthsYears/monthsAhead.asp>.

2. IESO 18 Month Outlook

To ensure reliability, the IESO also publishes the 18 Month Outlooks. In 2007, the IESO published the four quarterly 18 month forecasts within publishing timelines, thereby presenting the IESO’s assessment of the reliability of the Ontario electricity system for the 18-month period. The 18 Month Outlooks may be found at <http://www.ieso.ca/imoweb/monthsYears/monthsAhead.asp>.

3. Providing Support to the Ontario Power Authority (OPA)

During 2007, the IESO provided support to many OPA initiatives. The IESO assisted the OPA in the various generation procurement programs and supported the activities related to the IPSP with system information and technical and analytical expertise.

In support of the IPSP, the IESO made available several dedicated staff members to provide load forecasting and modeling expertise as well as to perform power system studies. Sustained effort went into finishing all the studies and preparing twelve assessment reports to be used by the OPA as supporting evidence in the IPSP filing to the OEB.

The OPA is in the process of developing two new demand response programs – DR II and DR III. Participants in these DR programs will be contractually obligated to reduce predetermined amounts of load. DR II focuses on providing peak reductions every business day throughout the year, while DR III targets peak reduction during the most valuable periods of the year as determined by the OPA. The IESO anticipates playing an increasing role in facilitating demand response in order to capture the associated economic and reliability benefits.

4. Market Rule Amendments

The following is a list and short summary of the six reliability-related market rules that came into effect in 2007:

MR-00334: Emergency Preparedness and System Restoration - Align Restoration Related Market Rules with Industry Practice

The amendment altered the obligations of restoration participants to more closely align with current industry practice. The changes require participants to self-certify that they are meeting their restoration related obligations rather than the previous requirement of document and schedule submissions. The amendment also modifies the definition of a restoration participant as it relies upon an obsolete defined term and is too specific.

These amendments align the market rules with current industry practice, make the process of completing the Ontario Power System Restoration Plan (OPSRP) more efficient and reduce the administrative burden on restoration participants and the IESO where reliability considerations make this possible.

MR-00332: Operating Reserve (OR) - Reducing Synchronized OR Requirement due to Regional Reserve Sharing Program Changes

This amendment allows the IESO to reduce its synchronized and/or non-synchronized ten-minute operating reserve (OR) requirement by a total of 100 MW, in accordance with Northeast Power Coordinating Council's (NPCC) recently approved changes to its Regional Reserve Sharing program (RRS).

MR-00331: Market Pricing - Specify the Facility Capability in the Market Schedule

This amendment defines the market parameter that controls the ramp rate multiplier used in determining energy market prices. The amendment defines that parameter to be 3-times the actual ramp rate.

MR-00330: Reliability Standards - Mapping Reliability Standards to Ontario Market Participants

This amendment obligates the IESO to identify, in consultation with market participants, each market participant's reliability standard's obligations or requirements. This identification will provide clarity and certainty to market participants as to which reliability standards' obligations or requirements apply to them. This amendment also proposes to clarify reliability-related information reporting requirements and remove an inconsistency between the current market rules and certain reliability standards with respect to the reporting of that information. Thirdly, this amendment explicitly identifies that the IESO's determination of the applicability of reliability standards' obligations or requirements is subject to the dispute resolution process. This would provide clear recourse for market participants and the IESO to address disagreements.

Lastly, the market rule definition of "NERC" is revised. Effective January 1, 2007, the North American Electric Reliability Council and the North American Electric Reliability Corporation merged, with North American Electric Reliability Corporation being the surviving entity.

MR-00327: Dispatch Data Submissions - Allow Price Changes Inside the Mandatory Window

This amendment allows market participants to revise or submit new dispatch data prices during the 2 hour mandatory window for reasons of safety, environmental, legal or equipment damage. The change would result in dispatch of facilities and market pricing on the basis of more accurate dispatch data reflecting the capabilities of the affected facilities. The amendment is required also to provide transparency in the market rules that dispatch data price changes are allowed in the mandatory window for the specified reasons. This transparency ensures consistent IESO treatment of such dispatch data change requests from market participants. The amendment also allows IESO to refer any dispatch data price changes made under the new rule to the Market Surveillance Panel for review.

MR-00284: Compliance - Include Reliability Impact as Criterion for Determining Financial Penalties

This amendment more explicitly identifies the consequences of non-compliance with reliability standards and the Ontario power system restoration plan. The specific rule amendments are:

- Include the impact of a market rule breach on system reliability among the criteria for fixing the amount of a financial penalty.
- Include the impact of a market rule breach on system reliability among the criteria for imposing sanctions in excess of \$10,000.
- Introduce a maximum financial penalty of \$1,000,000 for breaches of the market rules.
- Require market participants to operate in a manner consistent with their accountabilities within the Ontario power system restoration plan.

These amendments ensure that breaches of the market rules that have an impact on reliability are treated equally with breaches that have an impact on market operations. The introduction of a maximum financial penalty would address stakeholder concerns regarding the existing unlimited liability facing market participants for breaches of the market rules.

These changes are consistent with industry practice and recognize the potentially significant impact to the integrated power system of a reliability standard violation.

5. Stakeholder Engagement Activities

The *Electricity Act, 1998* requires the IESO to establish one or more processes by which consumers, distributors, generators, transmitters and other persons who have an interest in the electricity industry (collectively, stakeholders) may provide advice and recommendations for consideration by the IESO. In July 2005, the IESO Board approved the adoption of enhanced stakeholder engagement principles and processes, and approved the creation of the Stakeholder Advisory Committee (SAC), to ensure compliance with its legislative obligation. To date, over 50 Stakeholder Engagements have been initiated, with 25 of those introduced in 2007. Below is a list of notable reliability related engagements and activities initiated or currently underway in 2007:

Stakeholder Engagement Plan SE-44, Mapping of Reliability Obligations:

The mapping will help establish the applicability of the various NERC requirements and NPCC criteria to market participants. The IESO will produce this mapping of requirements and criteria for market participants tailored to their Ontario licence and specific facilities owned based on a set of defined criteria, the Ontario market rules and existing established processes. Additional details can be found at: http://www.ieso.ca/imoweb/consult/consult_se44.asp.

Stakeholder Engagement Plan SE-37, Operating Reserves Initiatives

Five Operating Reserve (OR) initiatives have been identified that the IESO believes have linkages and require a coordinated effort to address including; reducing the Ontario non-synchronized ten-minute OR requirement by 100 MW of Regional Reserve Sharing (RSS), reducing the synchronized ten-minute OR requirement by 100 MW of RSS, allowing dispatchable loads to provide either synchronized or non-synchronized ten-minute OR, adding to the market schedule the MW amount associated with Shared Activation of Reserve (SAR), and exporting OR. The initiatives also incorporate changes to the OR principles as approved by NPCC. Additional details can be found at: http://www.ieso.ca/imoweb/consult/consult_se37.asp.

Stakeholder Engagement Plan SE-38, Load Following Standard

This stakeholder engagement will determine how Ontario's existing supply mix satisfies the identified load following requirements; and to simulate how well potential supply mixes in the future will meet these requirements. Additional details can be found at: http://www.ieso.ca/imoweb/consult/consult_se38.asp.

Stakeholder Engagement Plan SE-33, Proposed Changes to Automatic Generation Control (AGC) Minimum Requirement

The objective of this engagement is to solicit stakeholder feedback on the impacts of removing from the market rules the minimum MW (100 MW) and ramp rate requirements (50 MW/Min) for regulation/automatic generation control (AGC). Additional details can be found at: http://www.ieso.ca/imoweb/consult/consult_se33.asp.

Stakeholder Engagement Plan (SE-29), Wind power Integration

The wind power integration working group has jointly developed recommendations and resolutions on priority operational and forecasting issues. Work is underway to complete actions arising from these recommendations. The group is exploring a new wind forecasting method and associated capacity contribution for use in Resource Adequacy models that support future reliability outlooks. These measures and activities are expected to reduce barriers to successful integration of wind.

The IESO is also continuing to work with Interconnected Gas pipelines (IGPs) on gas-electric interdependency studies and establishing effective coordination among the IESO and IGPs to ensure reliable electricity supply from gas-fired generation.

6. Market Evolution Initiatives/Activities

The IESO continues to work to ensure that the electricity market evolves in a manner that encourages reliable supply and improved economic efficiency, and is consistent with a vision that is supported by stakeholders. In particular, the IESO has concentrated on improvements to the efficiency of the present market, with a goal of providing meaningful price signals that reflect system conditions, allowing participants to contribute to reliability.

i. Ramp Rate Multiplier

In September of 2007, the change in the ramp rate multiplier to three times from the previous twelve times ramp rate was implemented. This move improved the quality of market signals to all consumers and producers by making the energy price more closely reflect the cost of producing electricity in real time. Improved price signals will enhance reliability by providing producers and consumers with a more accurate picture of system conditions.

ii. Day Ahead Market Mechanisms

The province is about to undergo an extensive infrastructure changes. The market will need to adapt to cope with a changing supply mix and to deliver conservation and demand response. IESO staff has been discussing the merits of various possible day-ahead designs and features with stakeholders, to better understand how these mechanisms might benefit their businesses, their sectors and the industry as a whole.

Throughout 2007, the IESO worked with stakeholders to gain an understanding of the possible mechanisms that may address these future challenges. Based on stakeholder input, work has focused on two possible options going forward: a day-ahead market based on unconstrained uniform prices, and a day-ahead price forecast. At the present time, stakeholders agree that these options are worth examining, but that more study is required to understand the implications of implementing either one. In late 2007, the IESO obtained IESO Board approval to proceed with further study of the two options.

iii. Market Enhancements

Market enhancements continued through 2007 under the following programs:

Day-Ahead Commitment Process (DACP)

The DACP was introduced in 2006 and continued through 2007 as a mechanism to commit internal resources and import transactions in advance of real-time in an effort to reduce transaction failures and provide certainty for internal and import resources.

Emergency Load Reduction Program (ELRP)

ELRP is an IESO initiative that provides incentives for electricity consumers to help address the reliability needs of the province. Currently, there are 11 participants offering a total of 318 MW of capacity. ELRP is intended to be an ongoing feature of the IESO-administered market.

Spare Generation On-Line (SGOL)

The SGOL program continues to contribute to improved reliability of the IESO-controlled grid by providing an incentive and mechanism for keeping spare generation on-line during shoulder periods. This additional generation helps eliminate temporary shortages of supply. Currently, 28 generating units are actively participating in this program.

The Emergency Demand Response Program (EDRP)

EDRP has been renewed in 2007, and continues to be used to mitigate the adverse impact of supply shortages when all commercial mechanisms in the market have been exhausted.

7. Connection Assessments

The IESO assesses and documents the impact of each new project on reliability and identifies the necessary system upgrades required to meet IESO reliability standards and to ensure continued reliable system operation.

Between January 1 and December 31, 2007, 75 generation, transmission and load connections to the IESO-controlled grid were reviewed through the Connection Assessment and Approval (CAA) process and another 71 assessments are under way and are near completion. Several transmission system enhancements identified as necessary in the ORO, the 18-Month Outlooks and various System Impact Assessments are progressing through this process. These include new transformer stations, new load supply facilities and facilities required to support system voltages. Also, assessments for some transmission projects that are part of the IPSP are now complete. A summary of these projects and their detailed reviews can be found on the IESO website at: <http://www.ieso.ca/imoweb/connassess/ca.asp>.

8. Generation Procurement Initiatives

The IESO has provided support to all initiatives announced by the Ministry of Energy and the OPA for new renewable, combined heat and power, and other clean generation resources in Ontario, and for the initiatives undertaken by the OPA in the area of integrated power system planning.

The IESO completed all the connection assessments for the successful government sponsored Renewable Energy Supply Request for Proposals II (RES II) and 2500 MW Clean Air Request for Proposals projects during 2007. The IESO also completed the connection assessments for four of the five successful high efficiency combined heat and power Request for Proposals (CHP) projects requiring our approvals. The remaining assessment is well underway. At the same time, activities supporting the commissioning testing of some of the RES I successful proposals continued. The support activities required for ensuring the reliable connection of the generation facilities and the proper reconfiguration of the transmission system will continue until the new facilities achieve commercial operation.

9. Coordination with Neighbouring Entities

The IESO effectively coordinated with its neighbouring Independent System Operators (ISO) and Regional Transmission Operators (RTO). New joint operating instructions were implemented with Minnesota Power and the Midwest ISO. Existing joint operating instructions were revised with the New York ISO, TransÉnergie and Niagara Mohawk Power Corporation (National Grid U.S.). Also, the Operating Agreement with Hydro One and the Interconnection Agreement with Minnesota Power were amended and restated. Additionally, the Operating Agreement with Great Lakes Power Limited was renewed as of May 1, 2007.

The IESO and TransÉnergie amended their Emergency Energy joint operating instruction (JOI) so that the pricing methodology for emergency energy will be the same (i.e. as established by the IESO and TransÉnergie) irrespective of the supplier providing the energy in Quebec. The new JOI was implemented on November 5, 2007.

As part of the amending of the Interconnection Agreement with Minnesota Power, the emergency energy pricing (Schedule D) was revised to contain references to prices in the Midwest ISO and IESO markets.

A new joint Interconnection Agreement was executed with the Power Authority of the State of New York (NYPA) in April. The Interconnection Agreement became effective following the termination of the 1965 Memorandum of Understanding (MOU) between Ontario Power Generation, Hydro One Networks and the Independent Electricity System Operator and the Power Authority of the State of New York. As part of its coordination efforts, the IESO continues to actively participate and effectively contribute to the ISO-RTO RTO Council (IRC) and its Standards Review Committee (SRC) discussions.

C. RELIABILITY STANDARDS, PERFORMANCE AND COMPLIANCE

1. Reliability Standards Compliance

The IESO oversees reliability through the enforcement of the IESO market rules and reliability standards and criteria established by standards authorities and the IESO itself. Reliability standards have been mandatory and enforceable in Ontario since market opening in 2002. In 2007, the IESO monitored compliance of 39 NERC reliability standards. Ontario yearly compliance with all the monitored reliability standards this year, including high risk factor NERC/NPCC standards that are within IESO's control, is 100%.

Under the NPCC's Reliability Compliance Enforcement Program (RCEP), the IESO also has to report on NPCC's more stringent criteria requirements. The IESO and all market participants were compliant with all NPCC criteria with the exception of two. NPCC's key facilities and critical component testing requirements continue to be a challenge for transmitters in achieving full compliance. The IESO is working closely with the transmitters to develop appropriate mitigation plans to ensure compliance in this area. The IESO is 100% compliant with all NERC and NPCC certification submission timelines. Additional details on the IESO's reliability compliance program may be found at: <http://www.ieso.ca/imoweb/ircp/reliabilityStandards.asp>.

2. New or Revised Reliability Standards and Measures

During 2007, the IESO developed positions and provided comments on more than 100 additions or revisions of NERC and NPCC Reliability Standards and Criteria. The IESO also provided its comments on FERC Notice of Proposed Rulings (NOPRs) on cyber security (CIP–Critical Infrastructure Protection) standards and the Facility Design, Connections, and Maintenance (FAC) standards, apart from commenting on the NERC

draft definition of “Adequate Level of Reliability (ALR)”. The IESO consistently advocated Ontario perspectives in ISO/RTO Council (IRC) submissions to NERC and other forums. The IESO has ensured timely reviews and submission of comments for each of these individual activities.

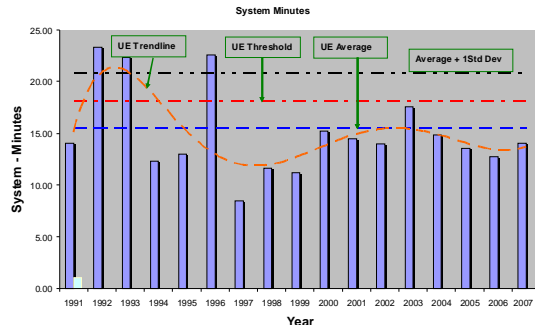
The IESO provides regular updates to market participants on all evolving industry changes and standards development activities. Actions were taken to assist market participants in achieving compliance with NERC and NPCC standards. The IESO recently began a program of mapping the requirements and obligations in NERC’s reliability standards to each Market Participant. This activity, which is now an obligation of the IESO through a recent Market Rule amendment (as noted above), will provide a clear understanding of a Market Participant’s responsibilities as they operate in the Ontario power system. The IESO also ensures that all certification forms for the IESO Reliability Compliance Program (IRCP) are stakeholdered through the Reliability Standards Standing Committee (RSSC). The RSSC is used as the forum to discuss standards and compliance related issues and concerns with Ontario Market Participants and in the process arrive at solutions and guidance to address raised concerns. For more information on the RSSC, go to www.ieso.ca/imoweb/consult/consult_rssc.asp.

3. Reliability Performance

i. Unsupplied Energy

One industry standard indicator of power system unreliability is the amount of load that is interrupted (unsupplied energy) each year, for any reason. The IESO examines the aggregate performance of the system with respect to unsupplied energy (UE) expressed in system minutes on an overall system basis as well as within 34 defined subsystems or local areas on the basis of UE/Mw/minutes. UE can be affected by a large number of factors including actions taken or not taken by the IESO and market participants under their obligations within the market rules.

Results for the period January 1, 2007 to December 31, 2007 as observed in the following graph indicate that the Ontario system unsupplied energy (UE) level is well within the Ontario permissible limit of one standard deviation based on the ten year benchmark. These results depict the capability of the IESO and the market participants in managing system reliability. These also demonstrate the adequacy of actions taken by the IESO and the market participants towards ensuring and maintaining the system reliability.



ii. NERC Readiness Audit

In 2007, as a follow up to its successful 2006 NERC Readiness Audit, the IESO began further enhancements of its wide area view capabilities associated with neighbouring electrical systems through network model builds. The IESO also successfully completed the scheduled replacement of its back up operating centre.

iii. NPCC Transmission Planner Audit

In late 2007, NPCC conducted an off-site audit of the IESO for its role as Transmission Planner and the Planning Coordinator for the province. The IESO was audited for compliance to the NERC transmission planning standards. The IESO provided all supporting documents including its resource & transmission assessment criteria, assessment publications such as the ORO, 18 Month Outlooks, transmission reviews submitted to NPCC, System Impact Assessment reports (SIAs), Market Manuals, System Control Orders (SCOs), the delegation agreement with the OPA, the OPA's Integrated Power System Plan (IPSP), and all relevant NPCC criteria & guideline documents. The audit concluded that the IESO was fully compliant with all of the applicable monitored transmission planning reliability standards. The audit report also noted that the documentation provided to NPCC by the IESO was precisely laid out and excellent in composition and detail.

iv. NPCC Peer Review of IESO Reliability Report 2007

On December 18, 2007, the IESO filed with NPCC senior management, the 2007 IESO Reliability Report. The Report describes the level of reliability in the province in 2007 and details the IESO's reliability related preparedness, processes, actions and activities to maintain the reliability and the security of the electricity grid in Ontario today and into the future. In response, the IESO received the second highest ever rating from the peer review team, which stated that the IESO "exceeds expectations" in securing and maintaining the grid.

v. Emergency Preparedness

In order to maintain and enhance Ontario's capability to manage reliability and respond to electricity system emergency, the IESO conducted 14 Power System Workshops across Ontario involving 330 individuals from 75 organizations, including the Ministry of Energy and Emergency Management Ontario. Additionally, due to its efforts and contributions including coordination of Critical Infrastructure Initiatives (CIP) in Ontario, across Canada, and with NERC, the IESO continues to be regarded as a leader on Critical Infrastructure Protection (CIP) matters by our provincial and both Canadian and U.S. federal governments.

Emergency preparedness activities include collaboration with key market participants and NPCC to develop criteria and to identify Ontario's critical assets. In addition, the Ontario Power System Restoration Plan (OPSRP) was revised in September 2007, and the Minister of Energy was provided with a preliminary assessment of Ontario's ability to maintain electricity reliability through an influenza pandemic. The IESO also actively participated with the Canadian Electricity Association Security and Infrastructure Protection (SIP) program, Working Group, NERC CIP Committee, and the NPCC's Task Force on Infrastructure Security and Technology (TFIST). The IESO's emergency preparedness activities and the related process can be found on the IESO web at <http://www.ieso.ca/imoweb/EmergencyPrep/Preparedness.asp>.

vi. Corporate Reliability Performance Measures

The IESO corporate measures were stakeholdered and redeveloped to align with the opening of the electricity market in 2002, focusing on a "balanced scorecard"¹ type approach. This approach, which has proven effective in delivering performance improvements and has provided continuity over time, continues as the basis for driving performance in 2007. The balanced scorecard approach addresses four perspectives that are intended to provide feedback from internal business processes and external outcomes. These perspectives are:

- Reliability and Operational Effectiveness;
- Customers and Stakeholders;
- Effective Use of Funds; and
- Market Evolution.

In 2007, IESO's corporate objectives were specifically considered in developing appropriate annual performance measures and targets. These objectives are:

- Delivering a reliable supply of electricity on demand;
- Providing value in the IESO's services and products;
- Developing Ontario's electricity market through evolution of the IESO administered markets;
- Responding to the needs and concerns of stakeholders; and
- Earning the trust of all stakeholders as a just administrator and capable advisor.

The IESO's reliability related performance impacts participants, stakeholders and the electricity grid and accordingly, measures and standards must be based on accepted standards of performance. In order to achieve its reliability objectives, the IESO continues to measure its results against established NERC and NPCC reliability standards and industry practices. In addition, the results of an annual peer review are factored into the IESO performance assessment.

¹ The Balanced Scorecard Institute, (<http://www.balancedscorecard.org/>)

Based on discussions with and advice received from the Stakeholder Advisory Committee during 2006, and supported by feedback received from a broad-based stakeholder consultation (SE-20), along with an assessment of IESO's own experiences with the effectiveness of its 2006 performance measures and results, the IESO retained the balanced scorecard type approach in 2007, while incorporating the following enhancements of the Reliability and Operational Effectiveness expectations:

- Added coverage for un-supplied energy;
- Incorporated development of reliability information and forecasts that satisfy industry needs; and
- Added the expectation that IESO processes supporting development projects are effective and timely.

An expectation for un-supplied energy was added to facilitate IESO actions aimed at ensuring that un-supplied energy in Ontario is within specified threshold limits and that at-risk local areas are identified for follow-up with the respective transmitters.

Expectations regarding reliability information and forecasts were added to ensure that processes, actions and activities associated with System Status Reports, Security and Adequacy Assessments, and 18 Month Forecast Reports are within publishing timelines or targets set by the IESO, and to ensure the IESO's independent Board of Directors and the industry are appropriately apprised of reliability related issues.

Providing effective development project support via connection assessments so that proponents achieve their intended market roles in a timely manner supports the proper development of the electricity system including new generators, transmission facilities and initial participation by market participants in various programs.

In addition, to continue reinforcing and driving improvements in reliability performance by using the established measures and expectations from 2006, the three enhancements will act to further drive IESO leadership and achievement in Ontario electricity reliability matters in 2007.

Current results for the IESO's corporate performance measures are available on the IESO web site at: <http://www.ieso.ca/imoweb/corp/corppperformance.asp>.

Appendix I

Participation and Memberships in NERC, NPCC and ECAR Committees, Task Forces, Subcommittees and Working Groups

NERC
Members Representative Committee (MRC)
Operating Committee
Critical Infrastructure Protection Committee
Finance and Audit Committee
Standards Committee
Compliance Certification Committee (CCC)
Standards Interface Subcommittee
Interchange Subcommittee
Operating Reliability Subcommittee
Reliability Assessment Subcommittee (RAS)
Personnel Subcommittee
Distribution Factor Working Group
Functional Model Working Group
Interchange Distribution Calculator Working Group
Reliability Coordinator Working Group
Operating Limit Definition Task Force
NPCC
Board of Directors
Full Member Representatives
Reliability Coordinating Committee
Public Information Committee
Regulatory and Government Affairs Working Group
Compliance Committee
Reliability Standards Committee
TFSS (Task Force on System Studies)
TFCP (Task Force on Coordination of Planning)
TFCO (Task Force on Coordination of Operations)
TFIST (Task Force on Infrastructure Security and Technology)
CO-1 (Working Group on Control Performance)
CO-2 (Working Group on Dispatcher Training)
CO-7 (Operational Review Team)
CO-8 (System Operating Managers Working Group)
CO-10 (System Operational Tools Working Group)
CO-11 (Restoration Working Group)

CO-12 (Operations Planning Working Group)
CO-13 (Available Transfer Capability Working Group)
Lake Erie SPWG (Lake Erie Security Process Working Group)
CP-8 (Working Group on Review of Resource and Transmission Adequacy)
CP-10 (Collaborative Planning Initiative)
SS-37 (Working Group on Base Case Development)
SS-38 (Working Group on Inter-Area Dynamic Analysis)
RFC-NPCC Steering Committee
RFC-NPCC Working Group
IST-2 (Telecommunications Working Group)
IST-3 (EMS-SCADA Working Group)
ISO/RTO Council
Communications
Info Tech
Markets
Planning
Regulatory
Standards Review Committee (SRC)
NAESB
Board
CEA
Critical Infrastructure Committee
Transmission Council
Regulatory and Development Task Group