Loss Factors - High Level Process Review

- Generators and opportunity services pay for losses on the Alberta Interconnected Electrical System (AIES). Information at www.aeso.ca > Transmission > Loss Factors
- Annual loss costs are ~ $240 million (based on 2009 estimate of ~2,759 GW.hr's/year of losses)
- Generators, loads, and major transmission enhancements affect losses
- The *Transmission Regulation*, 2004 (updated in 2007) require transmission connected generators, Industrial Systems Designations, Demand Opportunity Service, Import and Export Service pay for losses. ISD's are determined at a single Point of Interconnection.
- Total system losses are calculated by subtracting metered energy delivered from the system (PODs and exports) from metered energy delivered to the system (POS and imports)
- Loss Factors are determined through the '50% Area Load, Corrected R Matrix' methodology
- Principles of Loss Factors – please see 'Loss Factor Principles', below
- Loss factors (and a fifth year non-binding loss factor) are calculated annually.
- Loss factor process is based on ISO Rule - the latest Rule is located at www.aeso.ca
- Best information possible for the loss factors regarding a new project will result in best estimate of a loss factor (and of course the best overall interconnection)
- Loss factor estimates will be produced based on: an interconnection proposal, an STS level, and an ISD. A final loss factor will be provided by the AESO - invoicing starts after energization
- A final loss factor will be developed in the year prior to your interconnection in-service date
- A quarterly 'calibration factor' as per the *Transmission Regulation* will be applied
- The purpose of the 'calibration factor' is to act as an adjustment to loss factors to ensure that the actual cost of losses is reasonably recovered through charges and credits under the ISO tariff on an annual basis.

Loss Factor Principles

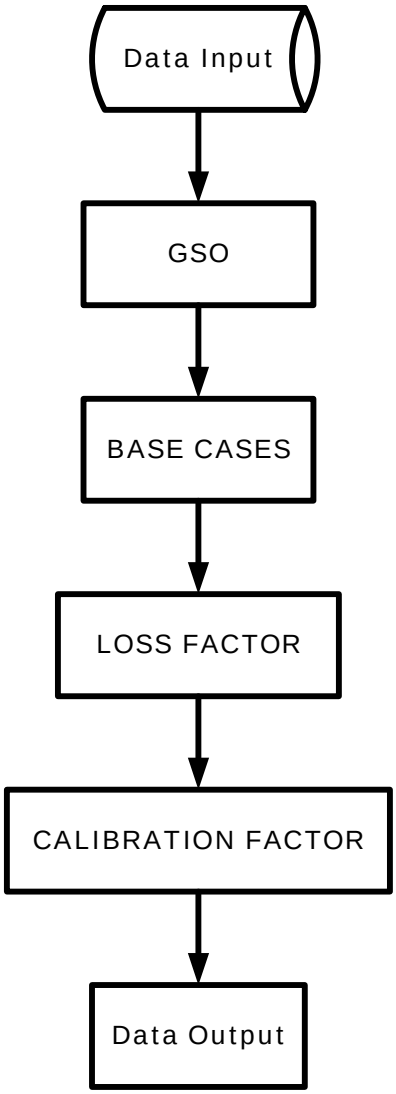
1. The loss factor methodology shall produce results that are accurate, repeatable, and predictable,
2. The loss factor methodology should provide a long-term generation siting signal,
3. Assigned loss factors must be a single number at each location,
4. Loss factors can be changed in less than one year if the AESO determines that a system change or upgrade materially changes the line losses,
5. Loss factors must apply for a period of not less than one year and not more than five years (to increase accuracy, the AESO is utilizing an annual calculation of loss factors),
6. Loss factors must be representative of the impact on system losses by each generator, group of generators,
7. Normalized loss factors shall not exceed 12% system average losses for charges and 12% system average losses for credits,
8. A calibration factor under the ISO tariff will ensure that the actual cost of losses is reasonably recovered on an annual basis,

9. The methodology for determining loss factors shall incorporate the best technical solution to meet the requirements of the regulation,
10. Loss factors will be made publicly available,
11. The new loss factor methodology was effective January 1, 2006 (subject to further Regulation), and
12. Access to the Loss Factor Methodology was provided in 2006.

For more information on loss factors, the calibration factor, or annual losses, please email lossfactor@aeso.ca.

Loss Factors - High Level Process and Information

Loss Factor & Calibration Factor Calculation Chart



Data Input

- Forecasted Loss and Loss Factor Customer Volumes from GTA
- Actual Loss Factor Customer Volumes (STS, DOS, IOS and EOS) from TSS
- Actual Loss Volumes, loss cost and revenue and billing data from Settlement & Risk
- Pool price, hourly load and loss forecast from Market Services
- Base Case, Project MPID from Technical Services
- Transmission Planning from System Planning
- Project Information from Engineering

Preliminary Loss Factor Data Input

- Project Information such as STS amount, In-Service-Date, Type of Generation from Engineering Group
- Interconnection scheme from Planning Group
- Interconnection IDEV from Technical Group

Did you know?

- **The estimated transmission loss is 2.72 TWHr and the loss cost is 220.3 million$ in 2008.**
- **Next year (2009) forecast for the transmission loss and loss cost are approximately 2.76 TWHr and 240 million$, respectively.**