



Congestion Revenue Rights (CRR) Educational Classes

The ISO is offering a CRR training course consisting of ten presentations over a three-day period from December 6th through the 8th, 2005.

PURPOSE

The presentations are designed to provide Market Participants the opportunity to learn the basics associated with CRRs. The material will be presented at a fundamental level and **will not cover policy related issues**. By learning the fundamentals of CRRs the participants should be able to understand the policy discussions and Tariff language being presented in other forums.

LOGISTICS

- The December 6-8 session will be held at the **Marriott Hotel** in Rancho Cordova, CA. (Directions available at: <http://marriott.com/property/propertypage/SACMC>)
- We will have breaks as needed throughout the day with an hour for lunch.
- A basic lunch will be provided but there are also several lunch facilities a short distance from the meeting location.
- The class times are approximations with the goal of the ISO to take as much time as is needed to answer questions to the best of our ability and to properly cover the material.



DESCRIPTIONS

Below is a description of the ten presentations, with the dates and approximate times.

Introduction: Course Objective

December 6th: 9:00 – 9:15

The introduction will be to set the expectations of the three days.

Presentation #1: CRR Educational Material Overview

December 6th: 9:15 – 10:00

This presentation covers the following:

- High level overview of the CRR Allocation process
- High level overview of inputs and outputs
- Brief explanation of the importance of the subsequent presentations.

Presentation #2: Locational Marginal Pricing: Basics of Nodal Price Calculation

December 6th: 10:00 – 12:00 and 1:00 – 3:30

This presentation covers the following:

- Definition of nodal price
- Characteristics and general observations about nodal prices
- Energy and congestion settlements with nodal prices
- Calculation of nodal prices using examples

Presentation #3: Full Network Model

December 6th: 3:45 – 4:45

This presentation covers the following:

- Fundamental components of an alternating current (AC) model
- Development of the Full Network Model at the ISO
- Conversion of the AC model to a direct current (DC) model, which will be used in the CRR Allocation process

Presentation #4: Operating Constraints

December 6th: 4:45 – 5:45

This presentation covers the following:

- General definition of operating constraints
- The need for operating constraints
- Types of operating constraints
- How operating constraints may be used with a DC full network model

Presentation #5: Shift Factors

December 7th: 8:00 – 10:00

This presentation covers the following:

- Definition of a shift factor in both the AC and DC models
- Methodology for calculating shift factors
- Example of determining flows on lines using shift factors



Presentation #6: CRR Basics Overview

December 7th: 10:15 – 12:00 and 1:00 – 2:45

This presentation covers the following:

- Definition and attributes of the CRR
- Different CRR hedge types
- How CRRs are used to hedge against congestion
- General settlements of CRRs and revenue adequacy

Presentation #7: Pricing Nodes and Aggregated Pricing Nodes

December 7th: 3:00 – 6:00

This presentation covers the following:

- Definition of Pricing Nodes and Aggregated Pricing Nodes
- How pricing nodes are defined and what they represent
- How Aggregated Pricing Nodes differ from pricing nodes used in the CRR Allocation and Forward Market

Presentation #8: Load Distribution Factors

December 8th: 8:00 – 9:30

This presentation covers the following:

- Definition of Load Distribution Factors (LDFs)
- Calculation of LDFs
- Connection between Load Distribution Factors and allocation factors used in Aggregated Pricing Nodes
- How load varies through the control area and how load is measured

Presentation #9: CRR Allocation

December 8th: 9:45 – 12:00 and 1:00 – 2:15

This presentation covers the following:

- Overview of the allocation process
- Inputs into the allocation process
- Basics on the optimization formulation for the allocation process
- Use of shift factors in determining the curtailment of CRRs
- Use of priorities within an allocation process
- Use of tie-breaker methodologies in the allocation process
- Impact of using Aggregated Pricing Nodes in the allocation process

Presentation #10: Settlements

December 8th: 2:30 – 5:30

This presentation covers the following:

- Settlements process of providing CRR revenue back to the CRR holders
- Examples of CRR revenue
- Use of the CRR balancing account