

# Markets+ Training

## Creating your SPP Learning Center Account

To begin your study, if you do not already have an account on the [SPP Learning Center](#), you will need to create one.

The screenshot displays the SPP Learning Center interface. At the top, the SPP logo (Southwest Power Pool) and 'learning center' are visible. The interface is split into two main sections: 'RETURNING USERS' and 'NEW USERS'. Under 'RETURNING USERS', there are input fields for 'USERNAME or EMAIL' and 'PASSWORD', followed by a green 'Login' button. Under 'NEW USERS', there is a note: 'Registration is required for new users of the SPP Learning Center' and an orange 'Register' button. Below this is a 'Search Division' window. It has a search bar with 'Title:' and 'ID:' labels. A yellow highlight is under the 'Title' field. A 'Search' button is to the right. Below the search bar, it says '(1 Result)'. A table shows the result:

Title	ID	Parent
External		Southwest Power Pool (SPP)

## Creating an Account








You must first register in the SPP Learning Center to access training. *Please use your company or business email address when setting up your account.*








## Non-Member Registration







- Select **Non-Member** Registration if you are an employee of a non-member company doing business with SPP. (This includes energy market participants who are not SPP members, etc.)

Click [here](#) to launch the SPP Learning Center login screen.

The courses listed below have been recommended based on your feedback and questions. If you would like to look at the entire suite of Integrated Marketplace courses, you can find them [here](#) on [SPP.ORG](http://SPP.ORG).

Course Name	Description
<b>Getting Started</b>	
Integrated Marketplace Overview	This module provides an overview of the SPP Integrated Marketplace and market fundamentals. The curriculum's nine modules includes an Introduction, the Key Roles and Components, Key Features, Pre-Market Activities, the Day-Ahead Market, Reliability Unit Commitment, the Real-Time Balancing Market, Settlements, and Transmission Congestion Rights.
	1 Hour, 26 Minutes
<b>Congestion Hedging</b>	
Transmission Congestion Rights (TCR) Overview	This module will define TCRs, the components used to calculate the financial impacts, and the methods Market Participants (MPs) may utilize to obtain TCRs.
	16 Minutes
Auction Revenue Rights (ARR) Overview	This module defines Auction Revenue Rights (ARRs) and details how they are used in the Integrated Marketplace.
	16 Minutes
Tying it All Together: ARR and TCRs	This module discusses aspects for Market Participants (MPs) to consider when participating in the TCR Market. Congestion costs, the value of TCRs owned, the cost of TCRs and ARRs held are all considered.
	7 Minutes
TCR Settlements	This module identifies the purpose of ARRs and TCR Auction settlements and explains the settlement process for these instruments.
	12 Minutes
<b>Market Monitoring</b>	
Market Monitoring Overview	This module identifies the purpose of the Market Monitoring Unit (MMU) and the activities it performs. This module also includes the reports provided that contribute to market transparency.
	10 Minutes
Market Mitigation Overview	This module details the purpose, types, and triggers of Automatic and Non-Automatic Mitigations.
	4 Minutes

Learning Burst: Market Mitigation (Automatic Mitigations)	This learning burst is about automatic mitigations. At the end of this learning burst, you should be able to identify how each automatic mitigation test is applied to a Resource Offer.
	7 Minutes
Automatic Mitigations	This module provides more details about Automatic Mitigations. It defines the purpose and identifies the tests associated with Automatic Mitigations. Additionally, it discusses the Conduct Test, Local Market Power Test, and the Market Impact Test, including their pass/fail thresholds.
	13 Minutes
Non-Automatic Mitigations	This module identifies the purpose of non-automatic mitigations. It also details how Virtual Transactions are monitored in the Integrated Marketplace.
	8 Minutes
<b>Market Operations</b>	
Day-Ahead and Real-Time Markets: A Conceptual View	This module provides an overview of the purpose and the benefits of the Day-Ahead and Real-Time Balancing Markets.
	12 Minutes
Locational Marginal Price: A Primer	Pricing remains an important topic to members and Market Participants (MPs). This module offers an explanation of the Locational Marginal Price (LMP).
	15 Minutes
Market to Market Overview	This module reviews the Market-to-Market (M2M) process between SPP and Midcontinent Independent System Operator (MISO) and the steps that occur during this process.
	43 Minutes
SPP Marketplace Timelines Quick Reference Card	This reference card details the current timeline of activities for the Day-Ahead Market and the Day-Ahead Reliability Unit Commitment (RUC) process.
What's the Skinny on VRLs and Demand Curves	What is a shortage? There is little consistency in the meaning of this term in our industry. This course explains how SPP defines a shortage and what pricing mechanisms are used for ancillary service shortages. Also, this course explores how ancillary service prices are derived before reviewing how Demand Curves (Scarcity Pricing) and Violation Relaxation Limits (VRLs) work.
	40 Minutes

<b>Day-Ahead Market</b>	
Day-Ahead Market Timeline and Activities	This module identifies the objective and timeline of the Day-Ahead (DA) Market. This course also details the algorithms used by the Market Clearing Engine and how the DA market clears.
	15 Minutes
<b>Real-Time Balancing Market</b>	
Real-Time Balancing Market Timeline and Activities	This module provides the timeline of events and activities in the RTBM. The content includes the RTBM Resource Offers and their objectives, setpoint instructions and Out-Of-Merit Energy (OOME) Dispatch.
	24 Minutes
<b>Reliability Unit Commitment (RUC)</b>	
Reliability Unit Commitment Process	This module provides a comparison of the Day-Ahead Market and the Day-Ahead Reliability Unit Commitment (DA RUC) process. It provides the DA RUC timeline, how the Security Constrained Unit Commitment (SCUC) algorithm is used during the DA RUC execution, as well as the process of evaluating resource recommendations and communicating the resource commitments.
	20 Minutes
<b>Special Resources</b>	
Dispatchable Variable Energy Resources (DVERs)	This module focuses on Dispatchable Variable Energy Resources (DVERs). It provides information on how these Resources are registered and modeled, offer parameters impacting market clearing and how SPP commits, dispatches, deploys, and settles DVERs. It also explains how Wind Generation Resources (WGRs) that are DVERs are treated in the Integrated Marketplace.
	34 Minutes
Non-Dispatchable Variable Energy Resources (NDVERs)	What is a Non-Dispatchable Variable Energy Resource (NDVER)? This module covers three defining characteristics of NDVERs and what you need to know from registration to deployment.
	28 Minutes
Pseudo-Tied Assets	This course provides details related to Pseudo-Tied Assets in the Integrated Marketplace. It identifies the registration and modeling requirements for Pseudo-Tied assets and the key operational characteristics. Additionally, it provides the guidelines for submitting Meter Data, and the charge types, and billing determinants pertaining to Pseudo-Tied Assets.
	30 Minutes

## Virtual Transactions

### Virtual Transactions Overview

This module is an overview of Virtual Transactions. It provides information regarding virtual energy offers, bids, and settlements for these transactions.



5 Minutes

## Registration and Modeling

### Relationship Between Commercial, Network and TCR Models

This module identifies the connecting components between the Network and Commercial Models, how SPP uses the TCR Model, and how PNodes correspond to current or future model information.



7 Minutes

### Resource Asset Registration: A Reference Guide for Market Participants

Asset registration is required for all Resources operating with SPP, and each Resource must be capable of performing the functions of that Resource as described in the Integrated Marketplace protocols. This reference guide provides an overview of the registration types and applicable self-study training available in the SPP Learning Center (LMS).