Purpose
Master PID control mechanisms and adjustment methods.

Characteristics
★ Master the control actions of controllers and their adjustment methods while getting experience with simulations of the various PID control curves.
★ Combining animated computer graphics, narration, and real video imagery, the explanations are given a sense of presence and realism.
★ With interaction provided in various places, students can progress through the materials at their own pace.

Curriculum
Introduction
Chapter 1 Basics of Feedback Control
Chapter 2 Process Characteristics
Chapter 3 Control Actions of Controllers
Chapter 4 Optimum Tuning
Chapter 5 Optimum Tuning Training of PID Controller

Who should take this course
Maintenance employees responsible for electricity or control facilities, administrators, field service workers involved in facility maintenance, and electricity or control workers

Course material outline
◆ Expected learning time: 5 hours   ◆ Number of tests: 2
◆ Shortest duration: 129 minutes

Supervised by
Idemitsu Kosan Co., Ltd.   Technical Training Center
Chapter 1 Basics of Feedback Control

101 Feedback Control
102 Control System

Chapter 2 Process Characteristics

201 Process Step Response
202 Process Step Response
203 Time Constant
204 Dead Time
205 Equivalent Time Constant and Equivalent Dead Time
206 Integral Processes

Chapter 3 Control Actions of Controllers

301 Control Actions of Controllers
302 Controller Response due to Proportional Action
303 Control System Response due to Proportional Action
304 Controller Response due to Integral Action
305 Control System Response due to Integral Action
306 Controller Response due to Derivative Action
307 Control System Response due to Derivative Action

Chapter 4 Optimum Tuning

401 What is Optimum Tuning?
402 PID Adjustment Steps
403 Optimum Tuning Using the Transient Response Method
404 Ratio Between the Equivalent Dead Time and the Equivalent Time Constant
405 Optimum Tuning of Integral Processes

Chapter 5 Optimum Tuning Training of PID Controller

501 Self-Balancing Processes (Self-Study Program)
502 Integral Processes (Self-Study Program)