EUCI COURSE

UNCERTAINTY RISK-BASED RESOURCE PLANNING

February 12-13, 2015
Hyatt Regency New Orleans
New Orleans, LA

EUCi is authorized by IACET to offer 1.0 CEUs for the course.
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OVERVIEW

Integrated resource planning (IRP), as currently practiced by scores of utilities, under-informs company and regulatory decision-makers about future operational risks. Traditional planning approaches rely extensively on relatively simplistic scenario analyses without the ability to capture the vicissitude of conditions that will transpire. Furthermore, even in more sophisticated planning constructs, the translation of this added uncertainty to the planning process can become cumbersome and unintuitive for decision makers. The outcome can be either a dizzying array of sensitivity runs with no clear cut path forward or an uncomfortable tradeoff between costs and risks with limited insight into the validity of these risks or the economic value of risk.

The standard of prudence requires decision makers to “utilize all the available information a reasonable person would use at that time.” Regulators in several states have mandated that risks, in addition to costs, be incorporated into the planning process. However, translating this risk into actionable intelligence that simplifies and clearly articulates planning direction requires new approaches to incorporate into the planning process. In today’s highly uncertain world with today’s advanced modeling tools, the planning construct has shifted toward establishing criteria for utilizing meaningful uncertainty to develop intelligent power planning portfolios.

This course will address approaches to monetize risk directly into the decision-making process, in addition to creating credibility in the underlying simulation of risk. It will also demonstrate the difference in the value of a “best plan” under a deterministic case, versus the least cost and least risk plan across a broad set of future conditions. Finally, it will provide electric resource planning professionals and regulators with specific tools to establish rigorous criteria for validating the simulation of uncertainty and its use in the planning process.

WHO SHOULD ATTEND

This program will appeal to professionals and support staff who support the following functions relating to ISO/RTO market transactions:

- Integrated resource planning
- Resource adequacy planning
- Strategic and long-range planning
- Forecasting and analysis
- Energy efficiency planning
- Demand response planning
- Generation and load planning
- Transmission planning
- Reliability planning
- Intra-hour operations analysis and modeling

- Renewable energy planning
- Environmental and GHG planning
- State regulatory and commission staff
- Carbon/emissions management teams
- Carbon/emissions market consultants and advisors
- Environmental compliance groups
- Regulatory affairs
- Asset management
- Financial analysis

LEARNING OUTCOMES

The course will provide attendees an opportunity to learn of best practices in risk-based resource planning in an interactive setting involving case studies, exercises, discussions of the planning process, and shared perspective of impacts of alternative approaches. The course will cover issues such as:

- Distinguishing different approaches of incorporating risk analysis into IRPs
- Identifying changes in supply fundamentals in today’s and tomorrow’s power markets
- Evaluating conservation versus generation programs
- Defining risk factors versus fixed factors
- Measuring planning portfolio risk premium
- Identifying the limitations of scenario analysis
- Evaluating concepts of expected value and probability setting
- Building structural relationships into uncertainty analysis and applying utility assessment analysis to regulatory constraints
- Recognizing and defining uncertainty scenarios
- Using simulation to measure and value resource flexibility
- Applying uses of stochastic principles to ensure robust plans in the face of multiple uncertainties
- Applying planning with uncertainty in ISO’s and competitive power markets
- Evaluating risk associated with Utility 2.0 business transformation
Thursday, February 12, 2015

8:00 - 8:30 a.m.  Registration and Continental Breakfast

8:30 - 10:00 a.m.  Utility Planning – Quick History and Evolution
- Integrated utility and load duration curves
- Nuclear and coal expansion, demand elasticity, and fixed vs variable cost
- Production cost modeling
- IRP’s and demand side programs
- Scenario analysis and Rorschach diagrams
- Relationship of risk-related analyses to production cost modeling
- least cost, least risk, efficient frontier
- Revenue requirements and distribution of costs
- ISO market dynamics and approaches to examine resource planning risk
- New York’s Utility 2.0 and Hawaii Electric’s power supply transformation

10:00 - 10:30 a.m.  Morning Break

10:30 a.m. - 12:00 p.m.  Introduction to New Concepts in Uncertainty Modeling
- Comparison of Models: Structural vs Stochastic vs Hybrid
- Mechanisms for modeling principal risk factors
- Maintaining structural relationships
- Accounting for future conditions
- Simulation validation criteria
- How to create transparency and credibility of simulations
- Where to use uncertainty analysis and/or scenario planning
- Other approaches to evaluating and managing risk and uncertainty

12:00 – 1:15 p.m.  Group Luncheon

1:15 - 2:15 p.m.  Recognizing the Value of General, but Relevant, Policy Impacts
- Modeling carbon risk and related emissions costs
- Modeling plant re-powering vs. retirement decisions for coal, oil and other fuel-sources
- Modeling renewable impacts
- Communicating “meaningful” uncertainty criteria
- Addressing hourly and sub-hourly price volatility
- Realizing value of flexibility with regard to ancillary services
- Incorporating shifts demand and supply fundamentals

2:15 - 3:15 p.m.  Interpreting Risk Assessment Analysis
- What is utility portfolio risk premium?
- Understanding expected value
- Probability trees
- Risk factor identification
- Distributional analysis of future costs/revenues
- “Risk premium” valuation of portfolio risks
- Analysis using “payoff diagrams”
- Case study illustration of concepts
AGENDA

Thursday, February 12, 2015 (Continued)

3:15 - 3:30 p.m.  Afternoon Break

3:30 - 4:15 p.m.  Anticipating Customer Migration and Customer Self-Generation
- Demand changes coming from Hawaii and California — harbinger of changes to utility business model?
- Competitive costs and regulatory considerations
- Preserving the utility in the midst of customer moves for self-sufficiency
- Grid defection and potential for grid death spiral
- Cost and value of power as a public good versus private good

4:15 - 5:00 p.m.  Quantifying Portfolio Value and Risks
- Valuing flexible versus inflexible resources
- Chronologically optimized energy and ancillary services modeling
- Capturing the value of flexibility with market price simulations
- Methods for benchmarking model results

Friday, February 13, 2015

8:00 - 8:30 a.m.  Continental Breakfast

8:30 - 10:00 a.m.  Applying an Integrated Decision Analysis Framework
- Understanding risk tradeoffs between portfolios
- Identification of risk metrics
- Asset valuation in resource selection
- Visualization of portfolio risks: “efficient frontier” and others
- Case study illustration of concept

10:15 - 11:00 a.m.  Uses of Stochastic Principles to Ensure Robust Plans in the Face of Multiple Uncertainties
Planners must balance the risks of load forecasting errors, delays in resource completion, changing regulations, and volatile market prices with the requirements to provide reliable power supplies in an economical manner. This segment will discuss the leading practices with respect to:
- EPA regulations
- Fuel prices
- Renewable mandates
- Retirements
- Flexibility
- Low market yields
- ISO studies, policies and practices (where applicable)
- Case study illustration of concept

11:00 a.m. - 12:00 p.m.  Group Discussion
This closing segment will be an open forum devoted to discussing and applying these concepts:
- Current ratepayer cost vs NPV in ratepayer cost
- Communicating resource selection criteria
- Modeling renewable impacts
- Communicating “meaningful” uncertainty criteria
- Long-run equilibrium and first principles
- Avoided cost analysis in competitive power markets
INSTRUCTOR

Gary Dorris, Ph.D. / President, Ascend Analytics
Dr. Dorris has been a pioneer of innovative solutions for energy planning and risk. For the last dozen years, Gary has introduced utilities to new solutions to model and analyze planning portfolios. His analytic innovations and expertise are sought by industry leaders including expert testimony in some of the most prominent resource planning and risk management proceedings in the country. His company’s software solutions are used by 3 of the top 5 utilities in America and many COOPs and municipalities. He has established industry standards for model validation, monetization of risk, portfolio selection, and performance metrics. In 2001, Dr. Dorris won distinguished recognition from the IPE for contributions to the field of energy risk management. Dr. Dorris holds a Ph.D. in applied economics and finance from Cornell University and a BS in mechanical engineer and BA in economics with Magna Cum Laude distinction also from Cornell University.

INSTRUCTIONAL METHODS

PowerPoint presentations, workbooks, discussion, and case studies will be used in this program.

REQUIREMENTS FOR SUCCESSFUL COMPLETION OF PROGRAM

Participants must sign in/out each day and be in attendance for the entirety of the course to be eligible for continuing education credit.

CREDITS

EUCI has been accredited as an Authorized Provider by the International Association for Continuing Education and Training (IACET). In obtaining this accreditation, the (organization name) has demonstrated that it complies with the ANSI/IACET Standard which is recognized internationally as a standard of good practice. As a result of their Authorized Provider status, EUCI is authorized to offer IACET CEUs for its programs that qualify under the ANSI/IACET Standard.

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EVENT LOCATION

A room block has been reserved at the Hyatt Regency New Orleans, 601 Loyola Ave., New Orleans, LA 70113, for the nights of February 11-12, 2015. Room rates are $194 single & double, plus applicable tax. Call 1-504-561-1234 for reservations and mention the EUCI course to get the group rate. The cutoff date to receive the group rate is January 21, 2015, but as there are a limited number of rooms available at this rate, the room block may close sooner. Please make your reservations early.

PROCEEDINGS

The proceedings of the course will be published, and one copy will be distributed to each registrant at the course.

REGISTER 3 SEND THE 4TH FREE

Any organization wishing to send multiple attendees to these conferences may send 1 FREE for every 3 delegates registered. Please note that all registrations must be made at the same time to qualify.
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EUCI reserves the right to alter this program without prior notice.

WWW.EUCI.COM
P: 303-770-8800
F: 303-741-0849

OR

Enclosed is a check for $_____________________ to cover _____________ registrations.

All cancellations received on or before January 9, 2015, will be subject to a US $195 processing fee. Written cancellations received after this date will create a credit of the tuition (less processing fee) good toward any other EUCI event or publication. This credit will be good for six months. In case of event cancellation, EUCI’s liability is limited to refund of the event registration fee only. For more information regarding administrative policies, such as complaints and refunds, please contact our offices at (201) 871-0474.