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Center for Advanced Power Engineering Research

Difficulties Involving Industry in the Educational Process

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Industry Involvement Options

- Class Guest Lectures
- Class Projects
- Capstone Design Projects
- Class Lab Exercises
- Course Design

Class Guest Lectures

- Typically have 2-4 Guest Lectures per Class
- Would prefer to have Guest Lecture more integrated in with course but:
  - Time constraints – people are busy
  - Industry material typically quickly recycled from past presentations
  - Little opportunity for feedback to industry presenter
- Industry speakers typically arranged on a direct contact basis, with no support provided by their employer
- Ideally industry speakers would work with instructor on the lecture material, provide homework and test questions, answer student questions on material

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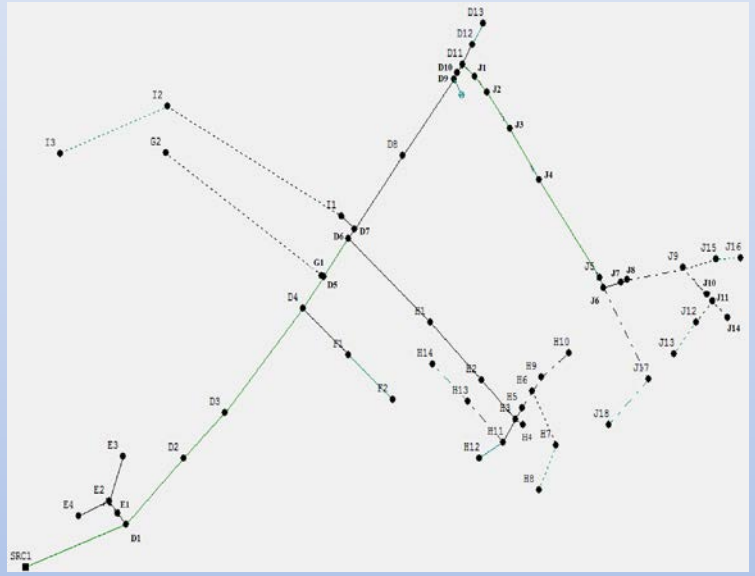
Class Projects

- Want to expose students to software tools used in industry
- Several companies make educational versions of their software available for student use; otherwise need to procure licenses
- Typically get industry input on Distribution class project models
- Ideally would like to have set of 2-3 circuits with about 50 nodes apiece



Capstone Design Projects

- Graduate MS in Power Engineering features capstone two-semester project
- Project topics and mentoring provided by industry
- Project solicitation based on direct industry contacts
- Challenge is to find topic of interest to industry that graduate students can complete in one academic semester given their graduate student background

Class Lab Exercises

- Smart Grid Communications class includes lab exercises with RTU and relays to familiarize students with SCADA setup
- Try to get equipment donated from vendors if possible
- Also need vendors to provide technical support, which can be an issue with donations

Course Design

- Courses not only need to support industry needs, but provide background for graduate research programs
- Many ideas on what to cover in curriculum, but unfortunately only so much can be squeezed in undergraduate curriculum or included in 30 hour master's degree curriculum
- For certain suggested topics, no textbooks are available or faculty don't have expertise
- Also need to consider that many power students are getting power-related positions that are not with utilities

Conclusions

- Success in involving industry normally a function of faculty's depth of industry contacts
- Industry involvement limited by busy schedules, so hard to sync up with course calendar
- If Industry lectures don't match to course material, difficult to have too many of these lectures and still cover course basics
- Would be helpful to have more project topics based on real Industry problems, but a large effort needed to distill these into simpler projects students can work on