University of Minnesota

A Nationwide Consortium of Universities, led by the University of Minnesota, to Revitalize Electric Power Engineering Education by State-of-the-Art Laboratories

STATEMENT OF PROJECT OBJECTIVES

A. PROJECT OBJECTIVES

The objective of this project is to revitalize U.S. power engineering education programs in institutions of higher education to meet immediate and near-future needs. This project will create a consortium consisting of a large number of universities, each of whom will implement the state-of-the-art laboratories in power engineering developed at the University of Minnesota. In addition to these laboratories, which will be new at the participating universities, this project will also result in much needed faculty development and new classroom materials in support of the power engineering curriculum. This new educational framework will quickly start producing a large number of graduates with a fundamentals-based education who can meet the multi-disciplinary challenges inherent to our nation's efforts to make the nation's grid cleaner, smarter, and more reliable. It will also be a foundation for graduate education and research in the areas of renewable energy such as wind, solar, storage, and energy conservation.

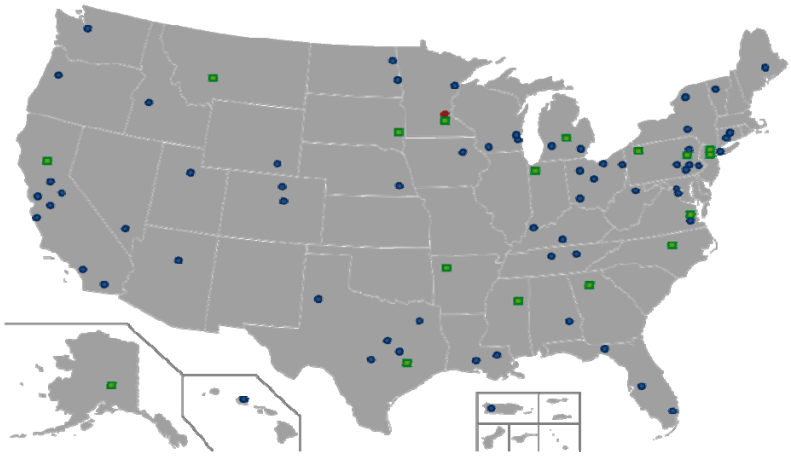
B. PROJECT SCOPE

The Recipient will initially build on a large and vibrant learning/teaching community of approximately 80 universities, forming a national consortium with extensive diversity, which will be expected to transform undergraduate power engineering education. The consortium will be a foundation for graduate education and research in the areas of renewable energy such as wind, solar, storage, and energy conservation. Partner universities will disseminate this curriculum to other regional universities, and technical and community colleges. In developing additional innovative laboratory experiments, the Recipient will seek the guidance of experts in this field to incorporate elements of current industrial practices and future trends.

The work performed under the Cooperative Agreement will allow the Recipient to:

1. Form a large and diverse learning/teaching community by establishing a consortium with a large number of universities that represent an extensive diversity in terms of geography, size, combination of teaching/research mission, and service to underrepresented groups;
2. Facilitate the implementation of laboratories developed at the University of Minnesota that are essential in supporting a forward-looking curriculum in power engineering.
3. With partnering universities and others having similar laboratory setups and software, collectively develop and share laboratory experiments that exploit the flexibility offered by these novel laboratories to suit the diverse nature of the consortium universities; and
4. Encourage and facilitate the participating universities to further disseminate these laboratories, and the curriculum in which they are used, in their region to other universities and technical and community colleges.

(http://blog.lib.umn.edu/itcomm/news/2010/04/university_of_minnesota_receiv_1.html)



Geographical distribution of consortium universities

List of Consortium Universities -

1. University of Alaska-Fairbanks
2. Tuskegee University
3. University of Arkansas - Fayetteville
4. Northern Arizona University
5. California State University, Sacramento
6. San Jose State University
7. San Diego State University
8. University of California Santa Cruz
9. University of the Pacific
10. California State University, Northridge
11. Santa Clara University
12. California State University – Chico
13. Colorado State University
14. University of Colorado Denver
15. University of Bridgeport
16. University of Connecticut
17. University of South Florida
18. Florida State University
19. Florida International University
20. Southern Poly State University
21. University of Hawaii at Manoa
22. Boise State University
23. University of Evansville
24. Purdue University Calumet
25. University of Northern Iowa
26. Western Kentucky University
27. Southern University and A&M College
28. University of Louisiana
29. The University of Maine
30. Oakland University
31. Western Michigan University
32. Michigan State University
33. **University of Minnesota – Twin Cities**
34. University of Minnesota, Duluth
35. University of St Thomas
36. Mississippi State University
37. Montana State University
38. University of Nebraska
39. University of Nevada Las Vegas
40. New Jersey Institute of Technology
41. Clarkson University
42. NYU – Poly
43. Binghamton
44. SUNY – Maritime
45. North Carolina State University
46. University of North Dakota
47. North Dakota State University
48. Cleveland State University
49. Miami University
50. Youngstown State University
51. The Ohio State University
52. Ohio Northern University
53. Oregon State University
54. Temple University
55. Lafayette College
56. Penn State University, Harrisburg
57. York College
58. Villanova University
59. Gannon University
60. Wilkes University
61. South Dakota State University
62. Tennessee State University
63. Tennessee Tech University
64. Baylor University
65. University of Texas, San Antonio
66. Texas A&M University Kingsville
67. Texas Tech University
68. Texas A&M University Prairie View
69. Texas A&M University – College Station
70. University of Utah
71. The University of Vermont
72. Old Dominion University
73. Hampton University
74. Seattle University
75. West Virginia University
76. University of Wisconsin Milwaukee
77. University of Wisconsin Platteville
78. Marquette University
79. University of Wyoming
80. University of Puerto Rico
81. The George Washington University
82. Howard University

AGENDA: DOE-Sponsored Workshop -

Revitalize Electric Power Engineering Education by State-of-the-Art Laboratories
(A Nationwide Consortium of Universities, led by the University of Minnesota)

August 9-10, 2010 Minneapolis, MN
(at the University of Minnesota - Twin Cities campus)

Workshop Objectives:

- Understanding the project goals and the role of each university in this consortium
- Hands-on familiarization with the laboratories and the experiments already developed
- Creating a large and a vibrant teaching/learning community

Monday August 9, 2010

7:30-8:00 a.m. – Registration

8:00-9:00 – Introductions and Welcoming Remarks

9:00-10:00 Overview of the UMN-Developed Curriculum and Laboratories

10:00-10:30 Break

10:30-11:30 Project Goals and Responsibilities

11:30-1:00 p.m. Lunch Break

1:00-3:00 Laboratory Session 1(Parallel sessions: 1. Power systems, 2. Power electronics, 3. Electric drives)

3:00-3:30 Break

3:30-5:30 Laboratory Session 2 (Parallel sessions: 1. Power systems, 2. Power electronics, 3. Electric drives)

Tuesday August 10, 2010

8:00-10:00 a.m. Laboratory Session 3 (Parallel sessions: 1. Power systems, 2. Power electronics, 3. Electric drives)

10:00-10:30 Break

10:30-11:30 General Discussion

11:30-1:00 p.m. Lunch Break

1:00-3:00 Presentations on Additional Available Resources:

- Schweitzer Laboratory
- PSCAD-EMTDC
- Electrocon (CAPE)

3:00-3:30 Break

3:30-4:30 Planning Discussion

4:30-5:00 Wrap-up and Certificates of Attendance