

Coal Refining: A New Technology Utilizing Our Most Abundant Fuel

ABOUT THE TALK: Coal is the most prevalent fossil fuel in the U.S. (and in the world) with a resource of some 6500 quads as compared with oil at 180 quads and gas at 210 quads (and fissionable uranium oxide at about 180 quads). In the U.S. in 2000, 3.02 quadrillion watt-hours of electric energy were produced. Of this electric generation, coal fueled 56.3%, oil fueled 2.4%, gas fueled 9.6%, hydro fueled 8.4%, and nuclear energy fueled 23.4%. Thus coal and nuclear account for almost 80% of the electricity generated in the U.S. With coal so prevalent clean coal technologies are important both economically and environmentally. Coal refining is one such technology. It is similar to oil refining in that the coal is hydrodisproportionated to produce a slate of products including, char (about 40%), an "oil" (about 35%) and naphtha, BTX, sulfur and ammonia. Since about 85% of the sulfur and 70% of the nitrogen originally in the coal are recovered as saleable products, the resultant char may be burned without pollution controls. As with an oil refinery the coal refinery may be tweaked to change the various product yields. It also has three end-use configurations, all three of which can produce very high purity diesel fuel. One configuration, which has unusually high returns (IRR), is coupling the refinery with an Integrated Gasifier Combined Cycle (IGCC) electricity generator. The technology will be discussed including energy and material balances, flow charts and schematics, and the three end-use configurations.



Dr. E. Gerald Meyer
February 11, 5pm
WSU Tri-Cities
East Bldg. Rm. 266
Auditorium

RICHLAND SECTION | 10 budget proposal

Shown here is the Richland Section budget for 2010. The Section Board believes the budget reflects the continuing priority of the Section in advancing chemical knowledge, both for members and the public at large, and supporting the development of young chemists. The budget is being submitted to the membership at this time for consideration, and will be voted on by the membership at the Science Café to be held on **March 16 at the Bookwalter winery.**

REVENUES

- (1) Annual ACS Allotment
- (2) New member commissions
- (3a) Donations, contributions
 - b) Bequests and/or trusts
- (4a) Rebate from ACS for Councilor travel expenses
 - b) Rebate from ACS for leadership conference
- (5a) Program revenue (includes newsletters, short courses, lecture series, national or regional meetings, etc.)
 - b) Leadership Development System
- (6) Local section dues, affiliate dues
- (7) Interest, dividends
 - a) Checking interest (Banner)
 - b) Savings interest (Banner)
 - c) ACS Investment Pool
- (8) Special events and activities
- (9) Meals (include total meals in revenue)
- (10) Other revenue (describe and itemize)
 - a) Reserved funds (Science cafes)*
 - b) Reserved Funds (student support ACS meetings)*
- (11) TOTAL REVENUES

2008 Actual	2009 Actual	2010 Budget
7,825.00	7,400.00	7400
15.00	75	0
0.00	0	0
0.00	0	0
1,932.00	1,994	1994
	300	300
8,919.02	0	3000
	0	3000
1,595.00	1,655.00	1655
136.73	36.28	0
5.07	7.96	0
131.66	28.32	0
0.00	0	0
2,134.53	0	0
0.00	0	0
0.00	0	2545
	0	715
	0	1830
22,557.28	11,460.28	16894

EXPENSES

- (12) Subsidies to subsections, topical groups, or affiliate groups
 - a) Travel subsidies for ACS student memebres
 - b) 2-year colleges
- (13) Awards, scholarships, grants, etc.
 - a) Awards
 - b) TCTC Teacher Grants
- (14) Administrative expenses (including postage, printing, and shipping)
- (15) Printing, publications, newsletters, meeting announcements, postage
 - a) Newsletter
 - b) Public relations
- (16) Local Meetings (include speakers' expenses)
 - a) Speakers
 - b) ACS Picnic
 - c) ACS Annual social
 - d) Post-NORM celebration
 - e) Science Cafes
- Leadership Development System
- (17) Meals
 - a) Arrangements
- (18) Travel subsidies to Councilors
- (19) Travel subsidy and fee for Local Section Leadership Conference
- (20) Other expenses (describe and itemize)
 - a) Regional Meeting (NORM) CC Event
 - b) TCTC Dues
 - c) NCW, K-12 outreach
 - d) Olympiad
 - e) Science Fair and award
 - f) HS Teacher Endowment Fund
 - g) Mini-Symposium
 - h) Women and Minority Affairs Cmte
 - i) Boy Scouts Nuclear Science Merit Badge
 - j) Earth Day
 - k) Project SEED
 - l) Other expenses
- (21) TOTAL EXPENSES

3,100.00	1,500	3330
2,300.00	1,500	1500
800.00	0	1830
0.00	0	0
0.00	0	0
0.00	0	0
425.86	0	200
1,138.71	1,902.02	1250
802.71	1,566.02	900
336.00	336	350
7,413.54	3,106.96	2665
1,519.49	2,588.04	1350
63.50	242.92	250
0.00	76	350
0.00	0	0
615.00	200	715
5,830.55	0	3000
0.00	0	0
0.00	0	0
4,283.55	4,190.22	4300
275.00	765	860
2,497.90	1563.34	2050
0.00	0	0
0.00	0	0
906.97	350	700
0.00	0	0
399.93	374.44	400
0.00	0	0
0.00	0	0
500.00	500	500
50.00	0	0
441.00	250	250
200.00	0	200
	88.9	0
19,134.56	13,027.54	17655

(22) EXCESS (DEFICIT)

3,422.72 -1,567.26 **-761**

* Reserved fund (science cafes \$415 and student support \$1830) is not new revenue but monies at hand committed for these activities)

10 OFFICERS

Listed below are the newly elected section officers. As their job is to make the section's activities of more value to you please contact them with your ideas!



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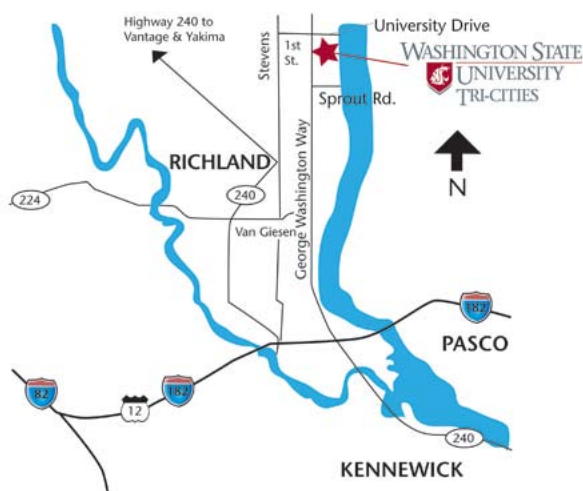
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10 BUDGET VOTE MAR 16 AT SCIENCE CAFÉ/BOOKWALTER

ABOUT THE SPEAKER: Dr. E. Gerald Meyer was born in Albuquerque, NM and attended Carnegie Mellon University (B.S. in 1940 and M.S. in 1942), and the University of New Mexico (Ph.D. in 1950). He was a laboratory chemist for the U.S. bureau of Mines, the U.S. Naval Research Laboratory (as a naval officer during WWII), and the Research Division of New Mexico Tech before returning to complete his graduate work. He was on the faculty of the University of Albuquerque, and New Mexico Highlands University (1952-63) where he was successively department head, and dean of graduate studies and research. In 1963 he was appointed professor and dean of arts and sciences at the University of Wyoming, and in 1976 vice president for research. In 1990 he retired and is currently emeritus professor and dean and works part-time. Dr. Meyer has served as State Science Advisor, as president of Council of Colleges of Arts and Sciences, of the Associated Western Universities, and the Laramie Regional Airport Board. He has chaired the ACS Rocky Mountain Regional Meeting, is past president of the American Institute of Chemists, is past chair and councilor of the ACS Wyoming Section, and has served and continues to serve on the ACS national committees. Dr. Meyer is a consultant to government agencies and industrial companies for a refining process he invented and patented. He has competed in the last three national Senior Olympics (5K and 10K road races), rides a Harley, and is Vice Mayor of Laramie, Wyoming.



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10 COMING EVENTS

FEBRUARY 11 *Dr. E. Gerald Meyer*, University of Wyoming (ret.), Coal Refining: A New Technology Utilizing Our Most Abundant Fuel

MARCH 16 *Science Café*, vote on the 2010 ACS Proposed Budget, Bookwalter Winery

MARCH 20 & 27 *Nuclear Merit Badge*, Sandra Fiskum, 628-1424

APRIL 15 *Ernest Simpson*, The Chemistry of Wine

MAY 13 *John Forman*, TBD

JUNE 26 *Annual Member Picnic*

NUCLEAR SCIENCE MERIT BADGE

*Merit Badge to
be Offered*



Richland ACS Section member Sandra Fiskum is organizing a training event for Scouts and other youngsters interested in learning something about nuclear science. During the course of two Saturdays, March 20 and 27, experts in nuclear science fields will be teaching the material with several interactive activities. This experience should be fun, interesting, and rewarding. At the conclusion of this 2-day class, each Scout will have completed the requirements to earn the Nuclear Science Merit Badge. Girl Scouts may be awarded an activity badge by the GSA. Non-scouts will receive a certificate of completion. The training is open to boys and girls 13 and older. Contact Sandy at 628-1424 or click here for more information:

www.bmcsa.org/docs/NukeScience2010.pdf



<http://acs.labworks.org>

Richland Section American Chemical Society
 Steve Krogsrud, *Editor*

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Point to Ponder

Even if you're on the right track,
 you'll get run over if you just sit there. – *Will Rogers*