NED
NUCLEAR ENGINEERING DIVISION

1993 Marx Issacs Award Recipient

NEWSLETTER

Volume 10, Number 1 SUMMER 2001

A Message to NED Members from the Chair

I take great pleasure in being able to address you in this Nuclear Engineering Division newsletter. The past division chair, Robert Wham, performed an excellent job in leading the division last year, and I hope I can do as well to serve you as this year's chair.

The AIChE Spring Meeting held in Houston in April 2001 proved to be a great opportunity for me to associate with several NED members and with many of the national AIChE staff. I attended several meetings that the national staff sponsored and I was duly impressed with how hard they work to provide services, help, and leadership for the AIChE membership. There are endless opportunities within AIChE for all members to get involved in their areas of expertise and interest. I encourage each of you to consider volunteering your talents and some of your time to AIChE.

The NED sponsored six technical sessions at the Spring Meeting under the leadership of Robert Wham. All six sessions contained excellent presentations and were well attended. Meeting participants are recognized in this issue. You can review complete information on the sessions and presentations through the AIChE home page and navigating through the Conferences page to the conference. We won't be sponsoring sessions this fall at the Annual Meeting in Reno, but I encourage you to check out that conference.

We do plan to sponsor sessions at both AIChE meetings in 2002. The Spring National Meeting will be held March 10 - 14, 2002, at the New Orleans Hilton, and the 2002 Annual Meeting will be November 3 - 8 at the Indianapolis Convention Center. During the programming workshop in Houston in January, we decided that we would continue to orient the Spring Meeting toward chemical engineers who are associated with facility operations. In keeping with that plan, the NED will be sponsoring an embedded symposium on Excellence in Nuclear Facility Operations at New Orleans. We will be contacting many of you to invite your participation. In addition, because of the recent renewed interest in utilization of nuclear power to provide much-needed electrical energy in this country, we are working on one or two future sessions related to this topic.

We plan to be involved in the annual meeting for the first time in many years. The annual meeting attracts more university professors and engineers associated with research and development. We haven't selected session topics yet but will be doing so in the next few weeks.

I congratulate Glen Benedict for winning the Robert E. Wilson award for the Nuclear Engineering Division for 2001. Glen contributed significantly to the nuclear industry during his professional career. He provided a very entertaining review of his career during the award banquet in Houston.

I also congratulate Robert Wham in leading the development of a very timely issue paper on the role that nuclear power can play in minimizing the release of greenhouse gases. This paper was completed last summer, was adopted by national AIChE and was provided to several Congressional leaders and to Vice President Cheney as he was leading the energy policy panel this spring.

I look forward to talking to as many of you as possible over the next year. Please call or e-mail me any time.

Ron Denney

In This Issue:

2001 Wilson Award, Pages 2-5

NED Technical Program, Pages 6-8

Nominations, Page 10

NED Contacts, Pages 11-12

Glen Benedict Wins 2001 Robert E. Wilson Award

Glen Benedict (right) receives the Robert E. Wilson Award at Houston.

The Nuclear Engineering Division is proud to present the 2001 Robert E. Wilson Award to Glen E. Benedict. Glen was selected for the award for his contributions to the successful development, startup and operation of the PUREX plant at Hanford and to the entire nuclear fuel cycle. A commemorative plaque and honorarium were presented to Glen at a special dinner at the AIChE meeting in Houston this past April. NED thanks The Fluor Foundation for its sponsorship of the Wilson Award since 1996.

Glen was active in AIChE and NED for many years and served as division chair in 1987. In addition to over 20 years at Hanford, he worked at General Atomic for 10 years and then at Fluor from 1984 until his retirement in 1992. Below is the text of his remarks at the awards dinner in Houston earlier this year.

Glen Benedict: The Making of a Nuclear ChemE

Thank you, I am honored by this award. I want to thank Keith Hampton for nominating me and Barry McElmurry, Bob Zimmerman and Larry Olguin for their kind words on my behalf. I sometimes have a hard time recognizing the guy my friends write about.

I noticed early mentors in the historical recipients of the award. R. B. Richards' name comes to mind. Manson Benedict may be related, but his family line changed the 'k' on the end to a 't' some 200 years after my family - l500's vs. 1700's.

I had a struggle thinking about what could or should be talked about this evening, after being out of this business for over nine years. Now that I have reached this age or place in life there are three things I talk about: (l) Christianity, (2) politics, and (3) myself. Since the first two seem to be more controversial than I am, that gives me a golden opportunity to talk about myself. My hope is that my extreme humility will make the pomposity of that selection bearable.

My academic training specialized in the field of physical organic chemistry. It took a stretch to become a chemical engineer in the nuclear area. When interviewing at Merck Chemical at the end of university life, every other person in their research department had burn scars somewhere on their visible body parts. Then, when my research laboratory blew up, a safer field of endeavor was in order and nuclear was the choice. This was a switch that was never regretted.

I became a chemical engineer for two reasons: (l) Chemical engineers make more money than chemists. (2) When asked to determine the HTU of a scrubber tower I said "The what?" The next Monday I was on loan to the pilot plant running pulse columns on shift to learn about HTU's. No more asking "The what?" Any new directions not understood, I'd nod and say "Sure, right away" and then go find a good chemical engineer in the group to explain it to me. My teachers were those chemical engineers working in the field on actual projects.

Also General Electric in the 1950's considered anyone trained in chemistry, and with mechanical aptitude, a chemical engineer. So thank Henry Ford for designing Model A Fords with enough challenges to help me develop mechanical aptitude. That Model A cruised through 77,000 miles of high school and college.

We arrived in Hanford in June 1951 - so that almost makes me a nuclear pioneer.

Quick analytical thinking without much data was the norm. They had not yet started up the solvent extraction separation process for uranium and plutonium. The bismuth phosphate precipitation processes were still in operation. My reputation was made as they were shutting down a bismuth phosphate facility. They had spent weeks trying to flush out a tank full of sludge. When called in and asked what to do, I suggested a mixture of citric acid and nitric acid. The tank was cleaned in two flushes. The only sludge sample I'd ever seen from that facility dissolved in a citric acid/nitric acid mix, but it wasn't even from the same tank.

One of my chemical engineering teachers was a

Continued on Next Page ➡

coworker named Ralph Pugh. Ralph knew more about mathematics than I could ever hope to learn. One afternoon in 1952 (5 years before Sputnik), Ralph was explaining to me about satellites and what velocities would be required to keep them in orbit, and he even explained how you could have synchronous orbits. Right then our boss walked in the office and he couldn't understand what my math lesson had to do with plutonium processing. He turned to me and said, "Glen, you have developed a reputation for getting things done, but I cannot figure out when you do them." With that he left. Ralph finished the math lesson and we went back to work.

An interesting example of some of the type tasks we worked on in the early 1950's follows. The boss came to me late on one Friday morning. He had been asked a question and needed an answer by 4 p.m. The engineers were designing a criticality-safe plutonium evaporator. They knew what would happen if the plutonium nitrite solution fed to the evaporator accidentally went acid deficient: The plutonium would polymerize and form a hydrated oxide and precipitate, but would the precipitate go through the worst-case hydrogen/plutonium ratio of about 18 and what would the plutonium concentration in the precipitate be?

At lunchtime one of my ChE teachers found an old empirical equation that was sort of related. Right after lunch I adjusted the acid of some plutonium nitrate solution and heated it to boiling, watched it precipitate, placed the slurry in a graduated centrifuge cone and let it settle by gravity. By using the empirical equation, the estimated hydrogen/plutonium ratio was about 15. This information was given to the design team that afternoon. For 10 years I was the authority that plutonium polymer had a formula of $PuO_2 \cdot 7.5H_20$. Then someone was given a six-month assignment to study plutonium polymer. At the end of this time, this formula was corrected. The correction was within experimental error of what had been done in three hours. Anyway, the design team had the right data for the evaporator.

The most fun ever at Hanford was helping recover the 1.5 grams of neptunium that was in each ton of aluminum-clad irradiated uranium. No special added equipment was used. At PUREX, where the purification of several hundred grams of neptunium was being carried out in the plutonium columns during a plant shutdown, something strange was going on. The neptunium was leaking out with the uranium. Neptunyl (V) should only extract like a big old cesium ion. On the way back to town, my in-between boss was wishing for an equipment failure that would give us more time to figure out what the problem was. That was all the incentive Glen needed. A cohort in PUREX engineering was called and asked if he would change to a new flowsheet if I could give him one. Hal Rathvon was ready to try anything. I guessed what the equilibrium distribution might be, took a sheet of paper with stage boxes on it and calculated a new flowsheet. Hal switched over before he went home and it worked perfectly. Can you imagine doing that in these days?! We never could prove in the laboratory what went wrong with that original flowsheet. In the 1980's, when PUREX was operating again, some young engineer checked the working flowsheet and discovered it wouldn't work using published data. He changed the flowsheet back to basically the original flowsheet. It flopped. He was told that was something Benedict had done back in the 1960's and he wasn't to question it. No one ever explained it. In that particular equipment, some interaction between uranyl (VI) and neptunyl (V) changed the neptunium extraction - go figure.

At Hanford, we made many proposals to try to take care of many waste problems up front, but the standard answer always was that our main effort was to get the cost of plutonium down to $10/gram. We met that goal temporarily. Do you wonder what the cost of that plutonium is now?

After the PUREX plant was shut down in 1972, there weren't any fun things for me to do at Hanford. I could see what was coming and didn't agree with spending billions of dollars to remove two-thirds of the radioactivity in the tank farms. I have a history of almost 30 years of referring to the Waste Management Programs at Hanford as Waste Manipulation. I have a great deal of respect for those that can do this work, but it wasn't for me.

So after 23 years in Richland, we left. It surprised a few people. The new work was at General Atomic in San Diego across old Highway 101 from Torrey Pines Golf Course. (Tough duty.) Milt Szulinski tried to talk me out of it by telling me that the HTGR's fuel cycle was too complicated. Now that was the wrong reason to use on me. I had become an "expert" on U-233-thorium separations during the two campaigns at Hanford PUREX plant. I was brought up a little short soon after arriving when told we had ten years

Continued on Next Page ➟

to have the separations plant researched, designed, built and operating or it would be a $300 million a year cash outflow. Oops, those HTGR reactor contracts had a clause that General Atomic had to supply U-235 for fuel if recycled U-233 was not available on that date! Now in 1974, $300 million was still big bucks.

I was in California when the nuclear moratorium was voted in. When the Sun Desert HTGR reactor fell into the nuclear moratorium, I thought moratorium meant "delay." Nope, means "No Nukes!" What would California give for about 8 to 10 more San Onofre plants about now?

My contribution to the nuclear moratorium debate was, when asked about the terrible waste problem at Hanford and what should be done about it, my answer was that it would be best to fill and cover them with rocks and forget that they were there. Do you suppose I am responsible for California being short of power?

After no contracts were forthcoming for high temperature gas-cooled reactors, some of the crew was farmed out to help Ralph M. Parsons to do conceptual designs for facilities for INEL in Idaho.

This activity gave me experience in engineering design work and the incentive to resign from General Atomic with ten years and one day tenure there. Vested rights! ...my only pension check.

The last 8 years of my career was spent on various chemical engineering designs at Fluor in Irvine, CA. This was a fun time. For the most part, in those eight years, we were involved in designing and redesigning facilities at the Idaho DOE site. What we were designing was actually being put in place and operated. That was the exception rather than the rule in the 1980's.

Then in 1986 the worm turned: Fluor won the design effort for the Hanford Waste Vitrification Plant. What irony. I didn't escape after all.

My friend Ron Drake, who now claims to be the only nonacademic chemical engineer in Montana, and I went to the kickoff meeting with a revised flowsheet that we had developed in two weeks with private Fluor funds and using modern technology (i.e. no slurry pump loop, no water pumped directly to the glass melter, evaporators running on liquids rather than slurries). We wanted to do a comparative cost estimate on that approach. We were told to be quiet not only by Hanford people but also by our own management. The flowsheet is still out there somewhere. It was a better approach.

I retired early, before my 64th birthday. You guessed it: Ultimately, I retired over Hanford Waste Management. We were commissioned to do a conceptual design on a new facility to replace the AR vault. We begged the Hanford representative to let us use an updated flowsheet (i.e. continuous centrifuges instead of settling tanks for solids separation and washing). No, you must use the AR flowsheet. Well, guess what? The conceptual design facility looked like the AR vault. We were blasted for that similarity. It was bound to look the same when the flowsheet was the same, but I was told that flowsheet and facility had nothing in common. My explanation to the site representative was that if he really believed that, there was nothing that could be done to help him...and besides, let's go down to the Mobil oil refinery and make some instant coffee! With a smile on my face I went to see my boss and informed him I had run out of work. So on January 3l, 1992 - exit interview at 1:30 p.m. - on the plane to my birth town in Idaho at 3:30 p.m.

I wasn't angry, just relieved. It is not in me to be politically correct. Science and engineering can only be based on truth - nothing else.

Let me make a couple of points and then I'll get out of your hair.

Back to the waste tanks at Hanford. They are not a major environmental problem, because of where they are sited. The major problem at Hanford came about by the decision not to keep the PUREX plant operating and process the final two or three thousand tons of N reactor fuel. That has left fragile spent fuel of Zircaloy-clad uranium metal. The engineers involved did studies of costs and made the recommendation to finish processing the fuel through PUREX. This was overruled by a "powers that be" study that concluded that millions of dollars could be saved by shutting PUREX down. Canning that fuel and putting it in the high level waste repository was the simple solution. There was never any way that fuel could have been canned and buried in Nevada without further processing to at least convert it to stable oxides.

I say this because I have seen the extreme reactivity of heavy metal hydrides. A coworker in about 1952 took about 500 grams of plutonium metal turnings from the processing line and prepared to dissolve them in nitric acid. The turnings had no visible hydride coloration that we could see. When

Continued on Next Page ➡

the acid was poured on, the reaction was so violent that three connected gloveboxes (about 3 feet, 6 feet and 4 feet long) pressurized. Later observation showed that a major part of that plutonium metal had melted.

Canning that spent fuel as metallic uranium plutonium without absolute removal of all water may produce very unstable hydrides. Impurities in these heavy metals (for example, manganese in plutonium) increase the amount and rate of reaction between water and the heavy metals.

The decision to shut down PUREX was a political one. I can only hope the political reason was to give my friends and relatives still in Richland a real tough problem to work on to keep them employed.

The final bill for that one decision to shut down PUREX will be at least an additional 10 billion dollars.

I write a lot of letters to the editor at our local newspaper. My current subjects are promoting nuclear power including IFR development (I have not given up), global warming, objecting to funding of faith-based organizations directly by government, voicing my displeasure with Alan Greenspan, and trying to overturn the voice vote of Senate ratification on the UN Convention to Combat Desertification. I wrote many letters to our last president. I gave up when the return form mail from the White House thanked me for agreeing with their position. I have already written three e-mails to the current president, with no replies to date. I am going to switch to handwritten snail mail.

Now the big crisis is global warming. We have already spent $100 billion changing Freon out to prevent the ozone hole and another $100 billion to remove the harmless soluble asbestos from buildings. Cutting CO_2 emissions will cost us much, much more. All three decisions are and were based on politics, not science.

At one time I was active in promoting hydrogen use as a fuel, but in my mind we would produce hydrogen from water using nuclear electricity and nuclear process heat! At General Atomic, we were working on the low energy thermal decomposition of hydrogen iodide in an iodine system. There is no current reference to it in the literature. It could only be contained in glassware at the time, and it was a mess to operate in the pilot plant. Now hydrogen is being promoted because there are no CO_2 emissions. Hey, wait a minute! The carbon-water reaction at high temperatures and pressures produces CO_2. It is the basis for the hydrogen reformers proposed with small hydrogen fuel cells. One new approach added slaked lime to lower temperature and pressure and produces calcium carbonate. Hey, wait a minute again. You make slaked lime by thermally decomposing calcium carbonate to calcium oxide and CO_2 . We cannot eat all the Tums produced in a hydrogen economy. So you recycle this calcium carbonate from the reformers until we just plain old wear that CO_2 out and it disappears. Heating peanut shells produces CO_2 also!

CO_2 is not a pollutant. It is the main reactant in photosynthesis. We can make a better case for increased plant growth from CO_2 emissions than they can for global warming. Thousands of renowned scientists have signed a petition arguing against global warming. Those thousands seem to be offset by one politician.

I want to encourage all of you to become more active politically, but I do not encourage you to force issues to the point that you will lose your jobs. This has happened. All that accomplished was it removed a dissenting voice in the debate for truth.

Again, thank you for this award. I hope you are not considering a recall after this talk. Allow me to close with the same words that I close my letters to the editor.

If you have not already done so, seek ye first the Kingdom of God. That is where truth abounds!

Thank you.

Wilson Award Nominations Sought

As Wilson Award Solicitation Chair, Nate Chipman's job is coordinating nominations for NED's Robert E. Wilson Award. The award is presented each year for outstanding chemical engineering contributions to the nuclear industry. This year's winner is 1987 NED chair Glen Benedict, as described previously in this newsletter. We are now seeking nominees for the 2002 award. Please contact Nate at chipna@inel.gov to begin the process of nominating the worthy candidate you have in mind.

Excellent Technical Program at Houston Meeting

As Ron Denney noted in his message, NED presented six technical sessions at the AIChE meeting in Houston this past April. Those attending enjoyed a wide variety of sessions and papers on interesting and relevant topics. Many thanks to all our authors, session chairs, vice chairs and other participants for an outstanding meeting. Meeting participants are recognized below.

Right: April Gil presents an overview of the Yucca Mountain Project.

Left: Paul Harrington discusses engineered systems at Yucca Mountain.

Session 103: **Processes for Preparation of Weapons-Grade Plutonium for Use as Mixed-Oxide Fuel**

Session Chair: Donald J. Spellman
Oak Ridge National Laboratory

- "The Concentration of Pu-236 Daughters in Plutonium from Dismantled U.S. Nuclear Weapons," Teresa L. Cremers and Thomas E. Sampson, Los Alamos National Laboratory
- "Modified Direct Denitration Applied to Co-Conversion: A Comparative Assessment," Robert M. Wham, David F. Williams, L. Kevin Felker, and Emory D. Collins, Oak Ridge National Laboratory
- "Lewis-Acid Effects on Gallium Volatility in Molten Chlorides," L. Kevin Felker, Louis M. Toth, Guillermo D. Del Cul, Robert M. Wham, and David F. Williams, ORNL
- "Measurement of Achievable Plutonium Decontamination from Gallium by Means of PUREX Solvent Extraction," L. Kevin Felker, Emory D. Collins, and David O. Campbell, ORNL

Session 104: **Recent Advances in Actinide Separation**

Session Chair: L. Kevin Felker
Oak Ridge National Laboratory

- "Overview of the Newest Reagents for Hydrometallurgical Processing of Actinides," Kenneth L. Nash, Argonne National Laboratory
- "Development of the Ceramic Prototype Test Facility: A Pilot Plant for Plutonium Immobilization," K. M. Marshall, Westinghouse Savannah River Company.
- "Recovery of Plutonium from Refractory Materials Using a Sodium Peroxide Pretreatment Process," Tracy S. Rudisill and David G. Karraker, WSRC
- "Plutonium Loading Onto Reillex HPQ Anion Exchange Resin," Edward A. Kyser, WSRC

Session 105: **Novel Chemical Processing for Nuclear Materials Reclamation, Stabilization and Storage: Part I**

Session Chair: Luis R. Canas
Westinghouse Savannah River Company

Session Vice Chair: Nathan A. Chipman
Bechtel BWXT Idaho

- "Predicting Tank Vapor Space Concentrations of Ammonia Based on Ammonia Solubility Measurements," David C. Hedengren, CH2M HILL Hanford Group, Inc.
- "Design and Operation of Magnesium Hydroxide Neutralization Process for Precipitating Plutonium from Waste Acid Solutions," Graham T. MacLean and Egbert L. Strieper, Fluor Federal Services
- "Dissolution of Unirradiated Mark 42 Materials in F-Canyon," William J. Crooks and Alice Murray, WSRC
- "Design of Systems to Recycle Nitric Acid from High and Low Level Waste," Andrew J. Eckles, Atlanta Technology Group, and Don W. Mullins, LANL
- "Pilot Scale Testing of Removal of Cesium from Simulated Radioactive Waste Using Ion Exchange," John L. Steimke, Timothy J. Steeper, Michael A. Norato, and Daniel J. McCabe, WSRC

Continued on Next Page

- "A Process to Generate High-Value Fluoride Gases Via Reaction of Silica and Uranium Tetrafluoride," David S. Schlier and Bridget M. Smyser, Starmet Corporation

Session 106: **Volume Reduction of Contaminated Organic Materials Via Oxidation**

Session Chair: Kevin Ramsey
Los Alamos National Laboratory

Session Vice-Chair: Peter C. Hsu
Lawrence Livermore National Laboratory

- "Treatment Options for High Activity Pu-238 Contaminated Waste," Vinod B. Bhambri and Kevin Ramsey, WSRC
- "The Stabilization of Cellulosic Materials Using Pyrolysis with Catalytic Conversion," Daniel J. Kathios, LANL
- "Hydrothermal Oxidation of Radioactive Halogenated Organics," Laura A. Worl, Steven J. Buelow, Dennis D. Padilla, David Harradine, Dallas D. Hill, Rhonda McInroy, Loan Le, and Gary Baca, LANL
- "Molten Salt Oxidation and Molten Aluminum Processing for Mixed Waste Treatment," Jeffrey P. Kulpa, Earthline Technologies
- "Molten Salt Oxidation Technology at Lawrence Livermore National Laboratory," Peter C. Hsu, LLNL, and Solim Kwak, U.S. Army Defense Ammunition Center
- "Molten Salt Oxidation of Energetic Materials and Radioactive Process Residues," Jerry S. Salan, NSWC Indian Head Division

Session 107: **Waste Acceptance Criteria for Yucca Mountain Repository**

Session Chair: April Gil
U.S. Department of Energy

Session Vice-Chair: Robert M. Wham
Oak Ridge National Laboratory

- "Yucca Mountain Project Overview," April Gil, U.S. DOE
- "Regulatory Framework for the Yucca Mountain Project," U.S. DOE
- "Engineered Systems at the Yucca Mountain Project," Paul Harrington, U.S. DOE
- "Natural System and Performance Assessment," Abe VanLuik, U.S. DOE

Session 108: **Novel Chemical Processing for Nuclear Materials Reclamation, Stabilization and Storage: Part II**

Session Chair: Ronald D. Denney
Bechtel BXWT Idaho

- "Evaporation of a Large Decontaminated Hanford Tank Sample," Hiroshi H. Saito, Charles L. Crawford, M. L. Crowder, and T. Bond Calloway, WSRC
- "Dry Blending to Achieve Isotopic Dilution of HEU Oxide Materials," Nathan A. Chipman and Roger N. Henry, Bechtel BWXT Idaho
- "Regulatory Off-Gas Analysis from the Evaporation of Hanford Simulated Waste Spiked with Organic Compounds," Hiroshi H. Saito, T. Bond Calloway, Daro M. Ferrara, Alexander S. Choi, and Thomas L. White, WSRC, and Luther V. Gibson, Jr., Bechtel BWXT Oak Ridge.

Upcoming AIChE Meetings

AIChE national meetings for the next couple of years are listed below for your convenience. For complete information, go to AIChE's home page and click on the Conferences link.

* 2001 Annual Meeting - November 4 - 9, 2001, Reno Hilton

* 2002 Spring National Meeting - March 10 - 14, 2002, New Orleans Hilton

* 2002 Annual Meeting - November 3 - 8, 2002, Indianapolis Convention Center

* 2003 Spring National Meeting - (Dates to be determined), George R. Brown Convention Center, Houston

Minutes of NED Executive Committee Meeting at Houston

Below are the minutes of the NED Executive Committee Meeting that was held at the AIChE Spring National Meeting at Houston. The committee meeting was held on April 22, 2001.

The meeting came to order at 5:30 p.m. The agenda for the meeting was distributed. The meeting attendees are listed below:

Name	*Phone*	*E-mail*
Jack Watson	865-574-6795	watsonjs@ornl.gov
Bill Holcomb	301-865-4684	william.holcomb@Prodigy.net
Nate Chipman	208-526-1424	chipna@inel.gov
Keith Hampton	509-373-1239	keith.hampton@fluor.com
Bob Wham	865-576-7783	wam@ornl.gov
Carla Sullivan	202-962-8696	carls@aiche.org
Sandra Dudley	770-604-9182, Ext. 363	sdudley@ch2m.com
Luis Canas	803-952-4624	luis.canas@srs.gov
Darlene Schuster	202-962-8694	darls@aiche.org
Ronald Denney	208-526-3102	denney@inel.gov

Ron Denney began the meeting with a review of the agenda. It was noted that several division officers and committee members would not be available to present information.

The Treasurer's Report was not available to be discussed at the meeting. Robert Wham indicated that the financial position of the division was strong and that there was no need to change the membership dues, which are now at $10. We agreed at the meeting that the dues would remain at $10.

(*Post Meeting Note*: The following information was provided to Ron Denney on May 10, 2001, by Dave Williams concerning the status of the division finances:

Copy of Annual Financial Report to AIChE for CY 2000. For this year, the following financial activity has occurred:

Deposits:

Dues: $650 (includes $300 outstanding from Dec. 2000 dues)

Fluor Foundation Payment: $1000

Spring 2001 Dinner Revenue: $270 (Bills to come later)

Payments:

Bulk Mailing Fee: $125

Total:

+$1795 (deposited to checking/save account: adjusted balance = $13,461.86)

Adjusted Balance Sheet Net Asset Value = $26,788.14

The following report from the Chemical Engineering Technology Operating Council (CTOC) was provided by the NED liaison, Jack Watson:

A NED report to the CTOC at the November 2000 Annual Meeting in Los Angeles had been requested. Unfortunately, no NED officers could attend the meeting, so Bob Wham had the presentation made by a substitute who was unable to discuss the division issues with the CTOC. Jack Watson and Joe Cramer made a telecom meeting after the Los Angeles meeting to Bob Wham. The CTOC suggested that the NED find ways to improve its Spring Meeting programming to encourage improved attendance. The Spring Meeting is having overall difficulties in that attendance has been steadily dropping. Ten years ago, attendance was around 2500; at the Spring 2001 Meeting in Houston, attendance was 1100. Breakeven attendance is around 1500. Therefore, a concerted effort by all divisions and forums that are providing programming in the Spring Meeting to improve attendance is being requested. This is not to be considered a threat to the existence of the NED. Some suggestions for improved programming include consideration of broader programming toward environmental, materials, medicine, etc. It was noted that the division should develop more expertise in programming. The current system of having the new chair attend the programming meeting and then be responsible for the following year's programming while he is the chair results in little overlap and always having a new person being responsible for the programming.

(Note: at the January 2001 Programming Workshop, Jack Watson had recommended to Ron Denney that the programming be performed by a team of at least three people (past program chair, current program chair, and incoming program chair) and that a program committee could also be utilized.)

Jack mentioned that the planned programming for the 2002 Spring Meeting is looking to move toward increased use of topical conferences. Topicals could increase the attractiveness of the meeting for participation by chemical engineers working in industrial settings. Industry management may be more likely to send an engineer to the meeting if the engineer can show he will be able to attend or participate in several related sessions.

Jack mentioned that Chemical Engineering Progress magazine is changing editors and format to provide shorter articles that are more industry related which is expected to improve the benefits of the magazine to the general AIChE populace.

Darlene Schuster presented a report on Government Relations at the meeting. She reported that the issue paper on the use of nuclear power to help resolve the global warming problem was very timely. This paper has been used as background testimony in Congress and had been provided to Vice President Cheney. She mentioned that a Senator Murkowski bill before Congress includes a lot of new work in the nuclear industry. She requested that the division consider preparing half-page papers on budget issues or other topics of interest.

She suggested that the division consider development of additional issue papers since nuclear energy is potentially emerging as a source of additional electric energy. Some topics discussed at the meeting include transportation, background radiation, and possible use of nuclear reactors to make hydrogen.

She suggested that the division consider sessions for the Spring Meeting in 2002 on nuclear power issues and that the Public Policy Forum topic was still available. The division should consider cosponsoring a forum on nuclear power with another division.

Division Strategic Planning was briefly discussed. Improved member communication and government liaison efforts were noted as two areas that could help improve member interest in the division.

The NED flyer that was presented at the Atlanta Spring Meeting in 2000 was discussed. Numerous copies are still available so it will be maintained for another year.

The AIChE Officer Training Conference was briefly discussed. The 2000 conference was held in Washington, DC, and was attended by Ron Denney. This conference was expanded to focus on division and forum leaders as well as local section leaders, and was felt to be very valuable training. The training conference will not be held in 2001 as a way to reduce budget.

Ron Denney briefly described the proposed NED programming for the Spring Meeting 2002. This will be a symposium on Operating Nuclear Facilities, and the preliminary sessions include the following:

a. Waste Minimization Techniques

b. Off-Gas Treatment and Management

c. Integrated Safety Management

d. Improving Process Reliability

e. Decontamination, Decommissioning and Deactivation

f. Configuration Management

g. Maintaining Appropriate Job Skills

h. Bioremediation Systems

For the Annual Meeting 2002, potential sessions could include these:

Subsurface Science

DOE Nuclear Materials Management Program

Food and Pharmaceutical Nuclear Applications

Etc.

Publishing a newsletter was discussed. The last newsletter from the NED was issued several years ago. Keith Hampton agreed to prepare the next edition of the newsletter.

A NED Directory was discussed briefly. It was felt that this would be a good tool, but that it should be available electronically and not issued as a printed document.

Division elections were addressed. The NED election should have been held before the Spring Meeting, so it is late. Ron Denney took the action to ask Arlin Olson to prepare the ballot. The ballot should include a proposed change to the bylaws to allow voting to be performed electronically. The appropriate wording is available from Peter Gannon.

There was no Membership Committee report. Robert Wham agreed to become the committee chair.

There was no Student Award committee report. Dennis Evans is the current committee chair but he is now retired and doesn't have the resources to attend the division meetings. The continuation of this committee needs to be addressed by the division officers.

Continued on Next Page ➡

The Robert E. Wilson award was discussed. It has been suggested that the requirement for AIChE membership be deleted in order to allow the award to be presented to deserving individuals outside the organization. Nate Chipman will continue as the chair of this committee. Bill Holcomb will chair the selection committee. Past award winners will be requested to help identify deserving candidates.

The NED was requested in the meeting to increase the nominations for Fellow candidates. Diana McCauley will be asked to run a query on who is qualified to be a fellow. Nate Chipman was asked to follow up on this query.

There was no Continuing Education Committee report. Shelby Miller is the current committee liaison. The continuation of this committee function needs to be addressed by the division officers, as the manner in which AIChE continuing education is directed has changed significantly.

The NED Web Page was briefly discussed. Thomas Klasson currently is the webmaster. There is a lot that can be done to improve the page. Robert Wham felt that Tom could probably support continuation of the page as is. Major improvements would require additional resources.

The meeting was adjourned.

Programming Plans for 2002

Over the last couple of years, programming at AIChE meetings has been moving toward an emphasis on operations at the spring meeting and on research and development at the fall meeting. In keeping with this, NED will be sponsoring technical sessions at both the spring and fall meetings in 2002. 2002 Program Committee Chair Ron Denney is assembling sessions for operations topics for the spring meeting, which will be held at the New Orleans Hilton March 10 - 14, 2002, and for R&D for the annual meeting at the Indianapolis Convention Center November 3 - 8, 2002. See the listing of topics in the minutes of the NED Executive Committee meeting in this issue. Please contact Ron at denney@inel.gov or at (208) 526-3102 for more information.

NED Seeks Nominations for Officers

NED is now seeking nominations for officers for terms beginning in 2002. We will be electing a new Vice Chair, who will serve as Chair of the Division in 2003. We will also be electing a new Director to serve a three-year term from 2002 through 2004. Serving as a NED officer is an excellent way to advance NED's objectives and to make new contacts within NED, within AIChE and at AIChE Headquarters. To nominate a candidate (including yourself!), please contact this year's Nominations Committee Chair, Keith Hampton, at keith.hampton@fluor.com or at (509) 373-1239.

As an aside, NED is in the process of asking members to change the division by-laws to allow electronic balloting; this measure is being sent to members separately from this newsletter. If the measure passes, NED members will need to make sure their personal information in AIChE's database allows others access to their e-mail address. You have to first register in Member Online Community at the following:

http://www.alumniconnections.com/olc/pub/CHM/

You then update your member info at the URL below, making sure that your e-mail address is not hidden from viewing by others.

https://www.memberconnections.com/olc/pub/CHM/directory.html

Membership Committee is Here to Serve You

Membership Committee Chair Bob Zimmerman is the NED officer who tracks our membership and their needs. Bob is a longtime AIChE and NED member and served as NED chair in 1991. You may be hearing from Bob as he works to make sure NED is giving its members what they want from AIChE and NED. Bob can be reached on e-mail at robert_zimmerman@notes.ymp.gov.

NED White Paper on Nuclear Power Timely for Energy Crunch

As Ron noted in his message, the Nuclear Engineering Division recently worked with the AIChE Government Relations Committee and AIChE staff to prepare a white paper advocating the expansion of nuclear power in the U.S. as a way to increase electrical generation capacity and reduce emissions of purported greenhouse gases. Bob Wham and others spent many hours writing, reviewing and polishing this paper.

As luck would have it, events of the last several months made the white paper very timely. The paper was being distributed to congressional staff members and others in Washington, D.C., even as Californians were suffering through rolling brownouts last winter and spring. AIChE staffer Darlene Schuster, our liaison with the GRC, said that the paper has had quite an impact and clearly states the need for new, clean electrical generating capacity that the nation is now starting to recognize. Many thanks go to Bob Wham for initiating and leading the preparation of the white paper. The paper is available on the web at http://www.aiche.org/government/pdfdocs/nuclear.pdf.

NED is now starting to work on white papers dealing with various aspects of the nuclear industry. As the nation considers revising its energy policy, NED members can contribute to AIChE's position on these issues. Input from a cross-section of our members is invaluable. If you're interested in participating as an author or as a reviewer, please let Bob know of your areas of interest and expertise.

Nuclear Engineering Division Planning for Golden Anniversary

NED is looking forward to celebrating its 50th anniversary in 2004. As the very first AIChE division, NED has a rich heritage and a colorful history. If you have historical information to contribute or ideas for our celebration, please contact Keith Hampton at keith.hampton@fluor.com.

2001 NED EXECUTIVE COMMITTEE AND LIAISONS

NED Committee Chairs

Membership
Robert D. Zimmerman
1261 Town Center Drive, MS-624B
Las Vegas, NV 89134
(702) 295-4346
Fax: (702) 295-4355
E-mail: robert_zimmerman@notes.ymp.gov

Nominations
2001: B. Keith Hampton
Fluor Hanford, Inc.
P. O. Box 1000, R3-56
Richland, WA 99352-1000
(509) 373-1239
Fax: (509) 376-0045
E-mail: keith.hampton@fluor.com
2002: Robert M. Wham
2003: Ronald D. Denney

Programming
2001: Robert M. Wham
2002: Ronald D. Denney
2003: (Open)

R. E. Wilson Award Solicitation
Nathan A. Chipman
Idaho National Engineering and Environmental Laboratory
P. O. Box 1625, MS-3425
Idaho Falls, ID 83415-3425
(208) 526-1424
Fax: (208) 526-9165
E-mail: chipna@inel.gov

R. E. Wilson Award Evaluation Committee
Chair: William F. Holcomb
19377 Keymar Way
Montgomery Village, MD 20886-5012
(301) 865-4884
E-mail: william.holcomb@prodigy.net

Herbert S. Isbin
2815 Monterey Parkway
Saint Louis Park, MN 55416
(301) 415-7286
E-mail: isbin001@aol.com

Glen E. Benedict
12824 Orchard Avenue
Nampa, ID 83651
(208) 465-7422
E-mail: geblb@aol.com

Student Award
Dennis R. Evans
2314 Santalema Drive
Idaho Falls, ID 83404
(208) 528-0658
E-mail: drevans-1@onewest.net

2001 NED EXECUTIVE COMMITTEE AND LIAISONS

NED Officers

Chair
Ronald D. Denney
Idaho National Engineering and Environmental Laboratory
P. O. Box 1625, MS-3114
Idaho Falls, ID 83415-3114
(208) 526-3102
Fax: (208) 526-4902
E-mail: denney@inel.gov

Vice-Chair
(Open)

Secretary-Treasurer
David F. Williams
Oak Ridge National Laboratory
P. O. Box 2008, MS-6181
Oak Ridge, TN 37831-6181
(865) 574-5769
Fax: (865) 574-6843
E-mail: williamsdf2@ornl.gov

Past Chair
Robert M. Wham
Oak Ridge National Laboratory
P. O. Box 2008, MS-6423
Oak Ridge, TN 37831-6423
(865) 576-7783
Fax: (865) 574-6008
E-mail: whamrm@ornl.gov

Directors

Director through 2001
E. David Houck
Idaho National Engineering and Environmental Laboratory
P. O. Box 1625, MS-3114
Idaho Falls, ID 83415-3114
(208) 526-9209
Fax: (208) 526-4902
E-mail: edh@inel.gov

Director through 2002
Charles W. Forsberg
Oak Ridge National Laboratory
P. O. Box 2008, MS-6180
Oak Ridge, TN 37831-6180
(865) 574-6783
Fax: (865) 574-9512
E-mail: cwf@ornl.gov

Director through 2003
(Open)

Liaisons and Committee Representatives

AIChE Research and New Technology Committee
Kenneth E. Plummer
Oak Ridge National Laboratory
P. O. Box 2008, MS-6306
Oak Ridge, TN 37831-6306
(865) 574-7069
Fax: (865) 574-6843
E-mail:plummerke@ornl.gov

AIChE Chemical Engineering Technology Operating Council (CTOC)
Joseph J. Cramer
AIChE
3 Park Avenue
New York, NY 10016-5901
(212) 591-7950
Fax: (212) 591-8893
E-mail: josec@aiche.org

AIChE Headquarters & Government Relations Committee Liaison
Darlene Schuster, Director
1300 I Street NW
Suite 1090 East Tower
Washington, DC 20005-3341
(202) 962-8690
Fax: (202) 962-8699
E-mail: darls@aiche.org

Continuing Education Committee Representative
Shelby A. Miller
Argonne National Laboratory
9700 South Cass Avenue
Argonne, IL 60439
(630) 252-7552
Fax: (630) 252-4176
E-mail: millers@cmt.anl.gov

Government Programs Representative
C. Phil McGinnis
Oak Ridge National Laboratory
P. O. Box 2008, MS-6273
Oak Ridge, TN 37831-6273
(865) 576-6845
Fax: (865) 574-7229
E-mail: cpz@ornl.gov

Division Editor
Dennis R. Evans
2314 Santalema Drive
Idaho Falls, ID 83404
(208) 528-0658
E-mail:
drevans-1@onewest.net

NED
AIChE
NUCLEAR ENGINEERING DIVISION

NUCLEAR ENGINEERING DIVISION NEWSLETTER
Keith Hampton
Fluor Hanford, Inc.
P. O. Box 1000, R3-56
Richland, WA 99352-1000
E-mail: keith.hampton@fluor.com

PRESORTED
STANDARD
U.S. POSTAGE
PAID
PASCO, WA
PERMIT NO. 27