

Keeping the lights on

In the long run, power market restructuring will satisfy demand, say BTC researchers

California's winter of discontent over its electric utilities has refocused the nation's attention on its energy infrastructure. The Golden State's bumpy emergence into the open power market has put electric utility deregulation on the hot seat.

After all, an old maxim states that whatever happens in California happens elsewhere in a couple of years.

But researchers in the Energy Division's Buildings Technology Center would caution against that sort of fatalism. Power market

restructuring, as they prefer to call it, if done correctly will encourage suppliers to expand capacity to meet demand.

What happened in California—service interruptions and financial brinkmanship—was not unforeseen. In a truly restructured system, power generators will be able to profitably sell their power where it is needed, and utilities will be able to buy it at a market price. But jimmy with that formula, and the lights may go out.

"California's situation couldn't have been planned better to mess up," says Brendan Kirby, of the BTC's Power Systems Research program. He says that the state legislated a key piece of the puzzle out of the open-market process: the utilities' ability to charge customers what it truly costs to purchase electricity.

"There are other factors—high demand, lack of generating capacity for a number of reasons and a highly regulated atmosphere—that make utilities averse to building," says Brendan. The result was that California utilities needed

power from outside the state that it couldn't afford to buy.

"That's why regulations don't work," he says: "California, like a lot of regions, can't hoard its power, and it's certainly not self-sufficient."

"Utilities were forced into a rule-driven system where they could buy power only for the next day. With a booming economy's growth in power demand—computer centers, for instance, have steel-mill appetites for electricity—capacity soon fell behind."

In a restructured environment, utilities will have the freedom to sell to customers that need power, wherever they are, at prices that would encourage investments in new generating capacity. An equilibrium between generation haves and have-nots should also result.

Admittedly, that's probably better news for the have-nots. In fact, the BTC's Stan Hadley pointed out in a paper published in 1998 that ratepayers in the Pacific Northwest, who have always had plenty of cheap hydro power available to them, might see rate increases under restructuring because utilities would be free to sell power to thirsty places like California. Sure enough, in a situation exacerbated by cold weather and a dry year in the Cascades, northwestern ratepayers are

(See LIGHTS, page 4)

Power producers must have economic incentive to add capacity to meet growing demand.



Bonneville Power Authority

"Best practices"-based compensation plan up for review

ORNL salaried employees—exempt monthly and nonexempt weekly—will soon be classified in their jobs based on new criteria designed to simplify and streamline the job evaluation process and bring the Lab closer to current industry "best practices."

The new compensation system has been proposed for ORNL and is currently being reviewed for approval by DOE.

Human Resources and Diversity Programs Directorate staff members designed the system using market survey data; benchmarking information from other DOE labs, private-sector research institutions and other industry; and "best practices" in the compensation field.

"ORNL's current job evaluation and compensation system has not substantially changed for more than 30 years. Although that system is still fundamentally sound, it does not reflect the compensation trends and practices in today's competitive market. The current system is also considered cumbersome,

inflexible and difficult to understand," Mike Willard, ORNL's Compensation section head, says.

"The industry trend is to recognize fewer job levels with broader salary bands, which allows for more flexibility in salary administration," says Mike. "To better align ourselves with market surveys and other R&D companies, ORNL has proposed a shift to a market-based system so that our job bands and associated salary ranges will be more reflective of the marketplace."

The changes and redesign plans for the new system have been reviewed and endorsed by the Laboratory's Leadership Team.

Pay-for-performance will remain the centerpiece of ORNL's compensation system. The proposed salary administration and pay delivery mechanisms will increase managers' flexibility to compensate employees based on their performance and contributions to the success of the Laboratory. At the same time,

internal system controls will ensure fair and equitable compensation practices across the Laboratory.

Promotions will also continue to be an integral part of the new system, Mike says.

The new compensation system, subject to DOE's approval, is scheduled to begin this spring. The "map-over," or transition, of Lab employees from their current grade levels to the new system's job bands should be relatively straightforward, and no change in ORNL employees' current salaries is anticipated as a result of the transition to the new system.

"As with any change, we anticipate some degree of anxiety associated with a change of this magnitude," Mike says. "To help mitigate some of this anxiety, we are attempting to keep everyone as informed as possible.

"Our implementation plans include initial

(See COMPENSATION, page 6)

Open campus

Lab's security focus shifting from fences and gates to building-based access

Within a few years two ORNL rituals are likely to disappear: The presentation of a DOE badge to enter the Lab and the alternative swipe of a badge through a reader at a turnstile.

ORNL Security has initiated steps to purchase a new Laboratory security system that will make the rotogates and badge readers essentially icons of the past. In their place will be proximity cards that will allow employees and visitors to access facilities on the ORNL campus.

"We're shifting from a perimeter-based protection philosophy—essentially fences and gates—to a building-based system," says ORNL Security Manager Bill Rich. "Things are going to look different—the campus will be more open."

In fact, the whole enterprise is being called the Open Campus Initiative. Fences and gates have always tended to make ORNL a less-than-inviting place to visit. The ORNL of the near future will present a more attractive work environment for the performance of work associated with the R&D mission, Bill says. "Our top-level scientists will find the environment more palatable for a lot of reasons, but easier access will certainly be one of them."

"The Open Campus Initiative will move us away from the traditionally heavy 'security footprint' usually associated with non-R&D DOE facilities," Bill says. "Our current security posture is not always viewed by our R&D staff as conducive to world-class science and is also seen by some as an impediment to recruiting top scientific talent."

With proximity cards, employees and visitors will gain access to individual build-

ings with cards that will be worn in addition to the DOE badges currently used. Employees will have access to almost all buildings; visitors to the Lab, including foreign-national visitors and guest assignees, will be able to access only buildings they are formally approved to enter. The Lab's fences may remain, but gates will generally be open.

"Other Office of Science labs have similar setups, but with the notable exception of the three western weapons labs we have more security interests to protect than most of them," Bill says, alluding to facilities such as Building 3019, which houses special nuclear materials. "We're not going to put special nuclear materials and classified information at risk. We'll protect the Lab, but we'll go about it in different ways."

The proximity cards, while allowing employees and visitors unfettered entry onto Lab real estate, will actually improve security.

"Once you're inside the fence now, you can go into nearly any building because they are unlocked," Bill says. "In the open campus scenario, the grounds of the Lab itself will be open, but buildings will be better secured. We'll also have improved key and lock controls within the buildings and better information about who has been in the buildings."

The new system will also save money over time. BWXT Y12 administers the current badge reader system, and ORNL has to pay substantially for that service. Use of proximity card access controls will also require fewer personnel.

Although the Lab's grounds will be open, buildings will be better secured.



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Curtis Boles

The Environmental Sciences Division's Zamin Yang is a molecular biologist currently doing research with plants and fish. A native of South Korea, she came to ORNL from Indiana University.

Some things remain to be worked out. Officials are still mulling over ways to configure the center of the X-10 site, which has legacy contamination issues and is home to several DOE security interests. Many buildings have multiple entrances, so deciding which entrances will be equipped with proximity readers, at about \$3,500 a pop, does require some research. The open campus will also require a "security culture change."

"Because of the absence of staffed portals and card readers at the site perimeter, people who disregard the displayed 'no trespassing' and other signage on the perimeter will more easily be able to come onto ORNL property. This means that ORNL staff members will need to be especially attentive for people who don't have badges properly displayed," Bill says.

The actual changeover is still a ways out: Installation of proximity card readers will begin this spring with some reader activation occurring in the early fall, but the total conversion likely won't be completed until sometime in 2002.

"Ultimately, the combination of UT-Battelle's facilities revitalization efforts and the Open Campus Initiative will result in both a more modern and accommodating Laboratory work environment, reflective of our R&D mission," Bill says, "while at the same time assuring appropriate levels of protection are provided for both sensitive DOE assets and the people of ORNL." —B.C. [ornl](http://ornl.gov)

Briefs

ORNL retirees who are receiving the new newsletter for ORNL and Y-12 retirees, *Retirement News*, will continue to receive *ORNL Reporter*. If you know of an ORNL retiree who isn't receiving *Reporter* and would like to, have them contact one of the folks listed in the box on the left. The new newsletter serves an estimated 12,000 ORNL and Y-12 retirees.

An updated version of the *General Employee Training Study Guide* is available for download from the Web at http://eshtrain.ct.ornl.gov/wmrad/get/sg_get_r1.pdf. The training organization recommends discarding any old versions of the study guide. Comments or questions concerning the new study guide may be directed to Edith Jones, 576-5387, jonesec@ornl.gov.

ORNL is fielding a team of walkers for this year's Anderson County March of Dimes WalkAmerica on April 21 at the Oak Ridge Mall. If you'd like to participate in the five-mile stroll, contact Fred Strohl, 574-4165, strohlhf@ornl.gov.

Lab Notes

Thom Mason leads the SNS

Lab Director Bill Madia said in mid-January that he would move quickly to fill the vacancy at the top of the Spallation Neutron Source project. He did. The new associate lab director for the SNS is the project's own Thom Mason, who has been the director of the project's experimental facilities.

Thom came to the SNS in 1998 from the University of Toronto's physics department faculty. He's also done research at Risø National Laboratory in Copenhagen, Denmark, and Bell Laboratories in Murray Hill, N.J.

Bill praised Thom as he announced the selection to Lab staff on February 22.

"Thom brings an unparalleled combination of scientific skills and direct project experience. In addition to scientific awards and honors too numerous to list here, Thom also enjoys the respect of the scientific community, the SNS staff, and our sponsors at the Department of Energy," he said.

Assisting Thom during the first months of his tenure will be Satoshi Ozaki of Brookhaven and Jay Marx of Berkeley National Laboratory, two veterans of technically complex accelerator-based construction projects.

Other key SNS assignments include Carl Strawbridge as acting project director, replacing Ed Temple, who completed his two-year assignment and returned to Fermilab, and ORNL's Tony Gabriel, who replaces Thom as acting director of experimental facilities. Searches are under way to permanently fill those positions.

There when you need them

It was 1:41 in the afternoon when the 911 caller reported that a subcontract employee had fallen off a tall ladder.

It was 1:42 when emergency responders from the ORNL Fire Department arrived.

Lab management treated the fire department's "A" shift to a thank-you breakfast on February 23 for their quick

response, which may very well have saved the man's life. His breathing nearly stopped and his injuries from the fall at Building 3505 included a head injury and several broken bones, including vertebrae.

The Fire Department's Danny Rosenbaum arrived first and attempted to restore the worker's breathing, eventually resorting to a breathing tube. At various points the entire A shift was involved.

"The report says the incident happened two blocks away, but it's more like a quarter-mile away," Laboratory Protection Division Director Don Stallions told the group. "I'd challenge anybody to get all the equipment together and respond to an incident a quarter-mile away in one minute. We take you all for granted."

The resulting Type B accident investigation report termed the response by the fire department and ORNL Medical as "excellent." The injured worker has since recovered enough to visit the fire hall.

Facilities and Operations Associate Director Herb Debban, who attended the sausage-and-biscuit fest, along with Deputy Director for Operations Jeff Smith, said, "If I ever need help, I hope you guys are on duty."

Genes, carbon are newsmakers

ORNL researchers have been involved in recent major science stories. The Life Sciences Division's Ed Uberbacher is listed as one of many co-authors of the National Institutes of Health and DOE working draft of the human genome sequence, published February 15 in the journal *Nature*. Ed and his Computational Biology section are part of the DOE Joint Genome Institute team that contributed to the huge project.

Supercomputers, such as ORNL's IBM SP, and software tools such as the ORNL-developed Gene Recognition and Analysis Internet Link (GRAIL) were major players in the joint institute's effort. Using these tools, ORNL analyzed and annotated much of the DOE portion of the draft sequence.

On another front, a set of presentations that included the Environmental Sciences Division's Gary Jacobs drew a standing-room-only crowd at last month's American Association for the Advancement of Science meeting. The topic of the presentation, which was proposed by Center for Global Environmental Studies Director Mike Farrell and the Energy Division's Tom Wilbanks, was carbon management, and interest is high.

Gary notes that several factors made the session a big draw. Carbon management, Gary says, is an emerging, interesting and controversial issue."

Reported by Bill Cabage



Thom Mason

Shelf life

A scientific paper published at ORNL 32 years ago has been included in the American Society for Cell Biology's recently published book, *Landmark Papers in Cell Biology*. The book celebrates ground-breaking advances made since the founding of the society 40 years ago.

The paper was co-authored by Barbara Beatty, with O. L. Miller Jr., in 1969, "Visualization of Nucleolar Genes" (*Science*, 164, 955-957, 1969). What's more, an illustration from that article, an electron micrograph showing nucleolar genes from an amphibian oocyte, is featured on the cover of the book (and shown here in the background).

Say the book's editors: "It is arguably one of the best known biological images produced in the last 40 years, amply demonstrating that 'a picture is worth a thousand words' ... it has been used many hundreds of times in textbooks and review articles."

Miller left ORNL a few years after the paper came out. Barbara is currently a staff member in the Life Sciences Division, where she serves as the quality assurance coordinator and as chair of the ORNL Animal Care and Use Committee. She says that, in 1969, the image was a breakthrough.

"People had taken electronic micrographs of strands of DNA, but no one knew what were the genes. Those were the first electron micrographs of identified genes in the process of transcribing RNA."

Another vintage paper, which likely foretold some things to come in 1951, got notice in the February issue of *Scientific American's* "50, 100 and 150 Years Ago" column:

"John A. Swartout of the Oak Ridge National Laboratory, in a comprehensive paper on the chemistry connected with nuclear reactors, revealed that this research had opened a whole new field of 'high-temperature chemistry.' Most chemical research in the past, he pointed out, has been conducted at room temperatures, and relatively little study has been given to chemical reactions above 100 degrees Centigrade. In the program looking toward the development of reactors for power, chemists must study how chemicals react at temperatures far above this level."

Lights

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feeling the pinch.

As we know all too well, ratepayers everywhere are getting bruised. Natural-gas customers are faced with high prices now largely because prices were, until recently, low, which suppressed the natural-gas industry's desire to drill for new capacity and encouraged users to switch to the "clean, cheap" energy source.

"This winter, the average wholesale price for natural gas went up from \$3 per million Btus to \$9 per million," says Stan. "It's currently gone down to \$6. California's price swing has been double that."

Brendan and Stan also point out that the price of pollution credits—negotiable credits that allow utilities to spread out the allowable amounts of pollution they generate—has risen from \$6 per pound to \$45!

But the consumer sees little of this behind-the-scenes volatility.

"Your monthly bills do nothing to reflect the actual power market," Brendan says. "Prices for electricity change hourly. If a utility has to buy power at a peak demand time, it has to pay more for it. So that utility is paying a lot more to keep your lights on at peak periods than it does at low-load times. It's a scene very similar to a commodities market floor.

"But you only see that one number on the monthly bill."

Brendan and Stan say three benefits should arise from a restructured power market, if played by the open-market rules.

1. In a competitive environment, power plants will be run more efficiently. "There is evidence of that," says Stan. "As run times go up, costs go down."
2. There should be more incentive to build new plants. That's also happening in other regions of the country. New England has proposals for 30,000 megawatts of new plant capacity, and Texas is also adding new capacity. "The profit motive is there," says Brendan.

(And that's not restricted to conventional means

Your monthly bills do nothing to reflect the behind-the-scenes volatility of the power market. If a utility has to buy power at a peak demand time, it has to pay more for it. But you only see that one number on the monthly bill.

of generation. Wind-power generation is the second-fastest-growing means of generation, trailing natural gas—a popular fuel that still offers less pollution, a fast hook-up and low initial costs. King coal's reign, on the other hand, is ebbing. "Nobody's building new coal plants, or very few," says Brendan.)

3. There should be a response on the demand side. "People respond and cut back on consumption when prices are high," Brendan says. "Rotating blackouts do that in a bad way. But an industry or home can cut back on the thermostat at peak times or agree to go off-line in times of peak load demand, making the market customer driven instead of centrally controlled."

Brendan and Stan give the example of one energy-consuming task: pumping water. Topping off the nation's water tanks makes up as much as 7 percent of the nation's power consumption. Water utilities could get a price break by pumping at low-demand periods.

A number of methods have been postulated to effect a customer-driven market, such as real-time pricing and distributed generation. One barrier to real-time pricing is communication: How does one hook the meter up to the price? This is probably more practical now, with the Internet, than it was several decades ago when the idea first came up.

Distributed generation's expansion hinges on the development of safety technologies. Customers who generate electricity as a by-product of their operations could sell it back into the system. However, there's a safety factor: Technologies to keep the grids safe for line maintenance operators, who would be vulnerable to unexpected voltage introduced into a system, are about as expensive as the generating systems themselves.

In the long run, restructuring could very well put more pricing power in the hands of consumers as they become more able and willing to react to the undulations of the power market. Programs toward this goal are being initiated with utilities, such as Georgia Power and the Los Angeles Department of Water and Power, and with cities, such as Louisville, Colorado Springs and even Crossville, Tenn.

Those programs, Brendan and Stan say, will show that a truly restructured power market is the real route to keeping the lights on.—B.C. [enr](#)

ORNL researchers contribute to Northwest's power, fishery research

Thousands of miles from the Pacific Northwest, ORNL researchers work to preserve that region's salmon habitat and to balance power generation needs.

Hydroelectric power accounts for about 10 percent of the electricity generated in the United States, but it plays a far bigger role along the Pacific coast. There, it accounts for more than 60 percent of the electricity generated.

"The trick is to generate electricity without harming salmon, sturgeon and steelhead as they pass through turbines and also to minimize effects of dams on their habitat," says the Environmental Sciences Division's Mike Sale.

A team of ORNL researchers is working on a variety of projects ranging from dam-licensing issues to white sturgeon growth to nighttime migration of young salmon.

One project, the Virtual Fish, represents some of the latest work aimed at determining the effects on fish of the turbulence created by dams and also the direct effects of turbines. The joint

project with Georgia Tech and Voith Siemens Hydro Power Generation, a turbine manufacturer in York, Pa., uses ORNL's teraflop (1 trillion calculations per second) IBM/Compaq supercomputers to perform simulation and analysis.

In another project, Yetta Jager and Mark Bevelhimer are studying the white sturgeon and its viability in the Snake River. The white sturgeon, which matures at 15 to 30 years and can live more than 100 years, is also the largest freshwater fish in North America.

"Fish survival, growth and development are linked to local river flow and temperature conditions," says Yeta, who discovered that optimal flow differed for dry and wet years. In wet years, it was better to provide very high flows in spring during out-migration.

ORNL researchers make other contributions to preserving the salmon habitat. For instance, Chuck Coutant serves on the Northwest Power Planning Council's Independent Scientific Advisory Board and the Independent Scientific Review Panel.—Ron Walli

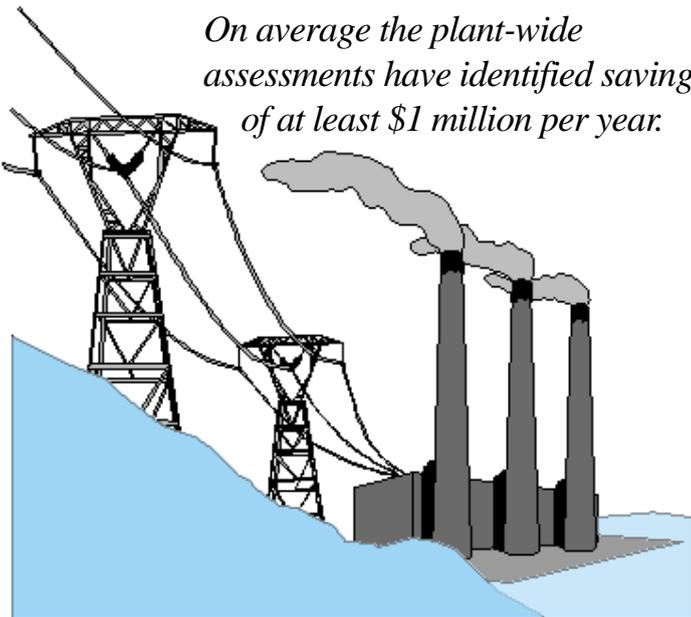
Energy savings, quick return

Program helps key 'industries of the future' cut their utility systems' costs

ORNL researchers, working with a DOE program, are saving key "industries of the future" thousands of dollars in energy costs with a process that starts by simply taking a look around.

Called the BestPractices program, the Energy Department's Office of Industrial Technologies is encouraging a set of key industries to take a look at their most energy-intensive plant utility systems and make improvements to increase energy efficiency. The program is attractive to companies because savings arrive sooner instead of later, says the Engineering Technology Division's Mitch Olszewski.

On average the plant-wide assessments have identified savings of at least \$1 million per year.



"This program assists companies in the near term by helping them focus on systems that give the largest return on investment," Mitch says.

Companies that participate in the program get a visit from BestPractices experts. These experts show the firm how to assess its utility systems using tools and techniques developed by the BestPractices program and find where energy efficiency opportunities exist.

Mitch gives the example of a fiberglass plant that has on the order of 1,000 pumping systems. After conferring with the mill manager, the ORNL group did a walk-through of the facility, applied the BestPractices pump assessment tools and quickly narrowed that seemingly overwhelming number of systems to a handful that truly made a difference.

"We took that 'world' of 1,000 pump systems and found 14 systems that represented 90 percent of the potential energy savings," says Mitch. "If we can identify the systems that can produce the most savings immediately, the rest can be addressed by asset management policies, such as buying efficient motors when old motors fail. In most

plants, 80 percent of the savings is in two or three utilities."

The firm's willingness to be a participant in the process is vital to its success, he says. "We did the pump assessment work with, not for, the plant. Working with the BestPractices team, the plant personnel were trained in how to use our tools and techniques, and so they continued the assessment after we left."

Other examples of the work the ORNL group does includes a pump assessment at a paper mill in Texas that narrowed a plant's 3,000 systems down to a crucial 20 that have the potential to produce \$750,000 in savings. U.S. Steel's Edgar Thompson Works reduced consumption in some of its systems by 85 percent.

The OIT includes nine industries in their Industries of the Future strategy—agriculture, aluminum, chemicals, forest products, glass, metalcasting, mining, petroleum and steel—and is willing to provide assessments, technical assistance and cost-sharing to firms who want to reduce their energy consumption and costs.

The OIT will match \$100,000 in costs if a company agrees to put up that much toward an assessment that develops a plant-wide energy-efficiency strategy. (They

usually invest more than that.) The company also must agree to host a showcase of the resulting improvements and to publish the results.

"It's pretty important to publish the results," Mitch says. "Boise Cascade identified ways to reduce the effluent temperatures in one of its plants, and other Boise Cascade plants with the same issues didn't know what they had done until we published a case study documenting the assessment results!"

Industries of the Future plants can also compete for a cost-shared, plant-wide assessment through an open solicitation, which doesn't require the showcase commitment. Either way, participating plants are coming out big winners, Mitch says.

"On average the plant-wide assessments have identified savings of at least \$1 million per year," Mitch says. "The longest payback we've seen in these assessments has been about two years. One assessment identified nearly \$10 million per year in savings. Perhaps the most interesting result was an assessment that identified savings of \$3.8 million with a payback of three months."

A factory's descent into inefficient operations occurs through a combination of age and changing missions.

"A 50-year-old plant may have been well-configured for manufacturing specifications in that era, but as products and processes change over the years, plant utilities and systems may not keep pace. As things change and expand or contract, plant utilities generally don't change and mismatches occur," says Mitch.

ORNL researchers' outside perspective comes into play as they identify solutions that often escape managers who deal with the systems on a daily basis. Sometimes it's as simple as noticing something.

"We walked into one plant to assess the steam system and immediately pointed to a failed valve. No one there had noticed it; it had likely been hissing away for years and had become part of the landscape," says Mitch.

The BestPractices program evolved from an earlier OIT program, the Motor Challenge. In addition to the on-site assessments, OIT also offers software tools to help firms evaluate systems and identify savings.

Industries interested in participating in the BestPractices program can contact Mitch at 946-1350.—B.C. [ornl](#)

Export compliance: Know what's an export

Shipping or mailing products to destinations outside the United States is typically understood as being an export and thus potentially subject to export controls. However, export control also includes information being transmitted to foreign nationals—even within U.S. boundaries—and sending information abroad by e-mail, fax or conversations.

A recently approved site directive, ORNL-CR-008 (formerly ORNL-MS-002), *Export Control for Shipping, Carrying, or Mailing ORNL Commodities and Information*, is designed to ensure compliance with U.S. export control laws and regulations.

Key requirements are knowing what is sensitive information (item or technology), obtaining the appropriate export classification (how and if regulations apply), knowing your end user (person or company) and the ultimate destination or end use (organization-country).

A new Web Site (www-internal.ornl.gov/BMO_ORNL/contracts/contresp9a.html) provides several links to assist individuals. The Export Compliance Office is offering awareness training. Contact Rolf Migun at 576-7230 or mip@ornl.gov to arrange a session. [ornl](#)

Salary increase date to change

In conjunction with the planned implementation of a new compensation system, ORNL is also planning to move the focal date for annual salary increases and promotions. The focal date is when merit salary increases are awarded.

This move, from October to January, better aligns individual performance evaluation periods with those of the Laboratory and, because of the timing, improves the quality of the market data that accompany the Lab's annual salary increase fund requests, says Compensation's Mike Willard.

Implementing the change in focal date during 2001 will involve

- extending the end of the current performance review period for ORNL salaried employees from June 30 to September 30, 2001, making this a 15-month performance review period, and
- moving the focal date for FY 2002 salary increases from October 1, 2001, to January 1, 2002.

Compensation

Continued from page 1

and ongoing training for managers and communications to all salaried staff. The new system will be much more open and accessible to employees than the current system, with most of the information readily accessible on the Web."

Once the plan is approved, training and communications on the program will be conducted through the directorates. Mike also plans to conduct a number of brown-bag information sessions on the new plan. Watch *ORNL Today* for announcements.

"The new compensation system will offer a simpler, more understandable and open method of job evaluation and provides an improved mechanism to pay employees for performance in jobs more closely aligned to similar jobs in the external market," says Human Resources and Diversity Programs Director Darryl Boykins. "We expect the proposed system to provide ORNL with more flexibility in salary administration, improved ability to respond to the external competitive markets, and enhance our ability to attract, retain, and motivate Laboratory staff."

More information on the proposed compensation plan can be found on the Human Resources and Diversity Programs Website (www-internal.ornl.gov/HR_ORNL/hr.htm) under Compensation. Pending DOE's approval, more detailed information on the proposed system will be added to the Web page.—B.C., with Mike Willard www.ornl.gov

Battelle's Olesen to keynote Leadership Week, March 19–23

Aligning activities with the Lab agenda, maintaining open communications and making organizational values an important part of effective leadership are the goals of this year's Leadership Week, March 19–23. The ORNL Leadership Action Consortium and the Values Committee have teamed up to sponsor this year's activities.

Events include a visit and keynote talk by Battelle President and Chief Executive Officer Doug Olesen on Monday, March 19, and a seminar the following day by Ron Crossland, CEO of the Tom Peters Corporation, on leadership in the new workplace.

All staff members are invited to attend the week's events.

Other attractions scheduled for the week include a presentation by Associate Lab Director for Facilities and Operations Herb Debban on leadership excellence in opera-

tions and a brown-bag luncheon talk by Tim Myrick on facilities modernization plans, both on Wednesday, March 21.

Thursday, March 22, has been designated Values Day. It will feature the always well-attended Values Awards ceremony, greetings at the gate by Lab managers and some entertainment at the ORNL cafeteria.

Olesen's keynote speech, with remarks by Lab Director Bill Madia, will begin at 8:30 on Monday, March 19. The Tuesday, March 20, seminar by Crossland, runs from 8 a.m. until 12:30 p.m. Registration for that free seminar is required; sign up by contacting Carolyn Ward, wardca@ornl.gov.

For a complete list of Leadership Week events, times and places, see the Leadership Week Web site, http://home.ornl.gov/general/leadership_week/index.shtml. www.ornl.gov

Service Anniversaries

March 2001

54 years: J. W. Dennis, Logistical Services

53 years: L. B. Russell, Life Sciences

51 years: Helen R. Atchley, Legal

41 years: Gerald D. Alton, Physics

35 years: John S. Wassom, Life Sciences

30 years: Barkley E. Batmon, Ezra M. Botts, John R. Clark, Brenda I. Mink and W. A. Rose, Plant and Equipment; Gloria M. Caton, Life Sciences; Fay M. Ownby, Physics; Willis E. Russell, Research Reactors

25 years: Jerry L. Butler and Jerry M. Williford, Logistical Services; Wayne A. Camp, Quality Services; Oakley H. Crawford, Life Sciences; Delores S. Foust, Contracts and Procurement; Larry D. Foust, Jerry M. Williford, Randal B. Hughes and Clark L. Surrent, Jr., P&E; Jeffrey A. Holmes, SNS Accelerator Systems; Elaine P. Inman and Debbie D. Williams, Business & Information Services Dir.; J. S. Lin, Solid State; Brad E. Nelson, Fusion Energy; Deborah P. Stevens, Computing, Information, and Networking

20 years: Terry P. Alton and Myra J. Rose, Business & Information Services; Anthony C. Duncan and D. L. Goins, P&E; M.T. Eady, Energy; Benito D. Gonzalez, Operational Safety Services; Gary L. Hackler, Laboratory Protection; Barbara S. Hoffheins, Instrumentation & Controls; Linda E. Kerekes, Engineering Technology

[Note: Last issue's January service anniversaries list had some chronological flaws (it was last year's list). Here is the correct list.]

January 2001

30 years: Allen E. Miller, Robert M. Mink, John D. Parrish and Jack W. Schaefer, Jr., Plant and Equipment; Kenneth S. Weaver, Instrumentation & Controls

25 years: Belinda H. Brown, Operational Safety Services; Jerry D. Coker, Plant and Equipment; Diana G. Cooper, Computing, Information, and Networking; Jorge Gomez Del Campo, Physics; David M. Hetrick, Computational Physics and Engineering; James L. Johnson and Mary R. Upton, Metals & Ceramics; Dave N. Keller, Instrumentation and Controls; Brenda H. Kimmel and Frank W. Larimer, Life Sciences; Vickie C. McGinty, Research Reactors; Rosa T. Murr, Office of Training Services; Herman X. Phillips, Chemical Technology; Luther C. Wilson, Jr., Environmental Protection & Waste Services

20 years: Elmer L. Ammons, Johnny D. French and Calvin E. Gallaher, P&E; Rodney W. Brewer and Tom D. Hylton, Chemical Technology; Rex E. Duncan, Computing, Information, and Networking; Alvin R. Ellis, Life Sciences; Sheila R. Holbert, Laboratory Protection; Russell Lee, Energy; Denise D. Schmoyer, Computer Science & Mathematics; E. E. Soler, Office of Audit & Mgmt Services; C. R. Vane, Physics; Judi B. Whitson, ESH&Q Directorate

ORNL welcomes three new Wigners, Petersen wins top award in Denmark

ORNL has a new crop of Wigner fellows. The two-year fellowships, named for the Lab's first science director and Nobel laureate Eugene P. Wigner, are awarded to some of the most promising postdoctoral researchers in the world. Another Wigner fellow, Lars Petersen, has received a superlative science award from his native Denmark.

First, the new fellows.

Warren Dixon completed his doctorate in electrical engineering (controls and robotics) at Clemson University following a remarkably prolific graduate student career that included authoring or coauthoring 12 papers in refereed journals; 15 conference papers, also refereed; and a book (in publication) focusing on the control of wheeled mobile robots.



Dixon

His Ph.D. work, under Professor Darren Dawson, was recently recognized by the Harris Outstanding Graduate Researcher Award in Electrical and Computing Engineering at Clemson. Warren earned a master's degree in electrical engineering from the University of South Carolina in 1997, which was preceded by a B.S.E.E. at Clemson in 1994, during which time he also worked as an engineering co-op student at the DOE Westinghouse Savannah River site.

Warren will continue his work in the development of robotic and intelligent machines in collaboration with Corporate Fellow François Pin in the Robotics and Process Systems Division.

Thomas Papenbrock most recently completed a three-year postdoctoral assignment at the Institute for Nuclear Theory at the University of Washington. He received his doctorate in physics from the University of Heidelberg in 1996.



Papenbrock

Thomas is now working with Michael Strayer in the Theoretical and Computational Physics section of the Physics Division, where he continues his work with chaotic quantum systems and tunneling

phenomena.

Thomas has also performed work in nanoscale systems such as Bose-Einstein condensates, and he will also study artificial atoms and nanoscale quantum systems through the Laboratory wide Nanoscale Science, Engineering and Technology initiative.

Daniel Bardayan, a native Tennessean, received his Ph.D. in Physics from Yale in 1999. Dan served a two-year postdoc assignment with the University of North Carolina, Chapel Hill. His undergraduate degree in physics is from Tennessee Tech University.



Bardayan

At ORNL Dan will continue his work in nuclear astrophysics research at the Holifield Radioactive Ion Beam Facility, which he used

extensively to complete his experimental research and dissertation at Yale.

On the basis of that work, Dan received the very prestigious "2001 Dissertation in Nuclear Physics Award" from the American Physical Society.

On the basis of his dissertation work, Dan also received a "2000 UT-Battelle Research Accomplishment" award for his *Physical Review Letters* article published in July 1999. The article describes the work he did in probing the details of how stars explode using beams of radioactive nuclei produced at the Holifield facility.

Finally, **Lars Petersen**, who began his fellowship last year working under the Solid State Division's Dave Zehner and UT/ORNL Distinguished Scientist Ward Plummer, was recently awarded the Danish Academy of Natural Sciences prize for outstanding Ph.D. thesis in the year 1999. The title of his thesis is "Scanning Tunneling Microscopy Studies of the Electronic Structure of Metal Surfaces." Lars is continuing his work in surface physics at ORNL. www.ornl.gov



Curtis Boles

Bill Madia congratulates Wigner Fellow Lars Petersen (right), who wrote Denmark's top Ph.D. thesis in 1999.

Meeting marks Holifield's 20 years

The Holifield Radioactive Ion Beam Facility celebrates its 20th year of operation this month with an international conference that will be attended by researchers from all over the world. Called ISOL'01, it kicks off on Sunday, March 11, with a day-long celebration of the Holifield's history, and a jam-packed science-session schedule runs through Wednesday.

"There are several good reasons to hold this meeting in East Tennessee," says Holifield's Deputy Director for Science Witold Nazarewicz. "The main reason, of course, the exciting physics, which can be addressed using exotic nuclei. The Holifield Radioactive Ion Beam Facility is the first U.S. ISOL (isotope separator on-line) facility specializing in low-energy nuclear physics and nuclear astrophysics research."

The Holifield Facility was a heavy-ion facility when the big tandem accelerator, housed in the landmark tower, went on-line in 1981. In the 1990s the facility was renovated to become a radioactive-ion-beam facility for research into nuclear structure, reactions and astrophysics.

ISOL'01 has a Website at www.phy.ornl.gov/hrifbf/isol01/. For more information on the conference, contact ISOL'01 Scientific Secretary Carl Gross, 576-7698, cgross@mail.phy.ornl.gov.

Careers at Lab topic of Women's History Month

A panel discussion on careers at ORNL and a talk by a TV host highlight Women's History Month activities in March.

Edye Ellis, of HGTV's *The Good Life* and *Today at Home* is slated to speak on March 7. Ellis is a former local news anchor and public relations specialist. Her talk is set to begin at 10 a.m. in Wigner Auditorium, Building 4500-North.

A brown-bag seminar on March 29 at the ORNL Cafeteria focuses on ORNL Women and their different career ladders (fire fighters, laboratory technicians, division directors). Slated to talk are Mary Brooks (auctioneer), Nancy Davis (optometrist), Charmaine Foltz, (veterinarian), Jan Preston (Leadership Team member), Peggy Richardson (firefighter) and Becky Verastegui (division director). The discussion is set to begin at 11:30 a.m. in the large dining room.

More on Women's History Month is on the Web at http://www.ornl.gov/HR_ORNL/whm/index.html.

ORNL people

The Federal Laboratory Consortium has awarded Excellence in Technology Transfer awards to all four nominations it received this year from ORNL. The FLC awards recognize laboratory employees who have accomplished outstanding work in the process of transferring a technology developed by a federal laboratory to the commercial marketplace.

"Only 35 teams were recognized from across the nation, with four being the maximum number that a federal laboratory may receive," says Larry Dickens in the Office of Technology Transfer, who coordinated this year's nominations. The ORNL FLC award winners are

- "RABITS: Substrate for Second-Generation Superconducting Wire," with the team of **Parens Paranthaman, Donald Kroeger, David Christen, Amit Goyal, Ron Feenstra, Fred List, Dominic Lee, David Beach, Eliot Specht, David Norton and Bob Hawsey**
 - "High Thermal Conductivity Graphite Foam," with the team of **James Klett, Ashok Choudhury and Timothy Burchell**
 - "Microcantilevers: Versatile Microscopic Sensors," with the team of **Thomas Thundat, Robert Warmack, Charles Britton and Grady Vanderhoofven**
 - "Polymer Boot Heater to Improve Vehicle Assembly-Line Ergonomics and Production," with the team of **Vinod Sikka, Craig Blue, Barry Whitson and Madu Chatterjee**
- Last year **Bill Madia** was named one of

the FLC's four directors of the year for his tenure as Pacific Northwest's lab director.

The National Academy of Engineering has elected **Jack Dongarra** of the Computer Science and Mathematics Division and the University of Tennessee as one of 74 new members. Jack is a former UT/ORNL distinguished scientist. Members from ORNL's university partners are Robert F. Davis (North Carolina State), Bruce R. Ellingwood (Georgia Tech) and Thom J. Hodgson (North Carolina State).

UT/ORNL Distinguished Scientist **Ward Plummer** and the Physics Division's **Witek Nazarewicz** are included in a new list of the 1,000 Most Cited Physicists, along with retired ORNL researcher **Jack Harvey**. Nazarewicz, the Holifield Radioactive Ion Beam Facility's science director, is listed as number 237 with 4,358 total citations, and Plummer is listed as number 515 with 3,244 total citations.

The top ORNL citation-getter, however, is Harvey, at number 122 with 5,349 citations.

The list was compiled by the Institute for Scientific Information and is based on papers published between 1981 and 1997 in all the physics journals covered by the citation service Current Contents.

The Metals & Ceramics Division's **Steve Zinkle** will be inducted as a fellow of the American Ceramic Society in April at the society's annual meeting in Indianapolis. He is being honored for his work on radiation effects in ceramic insulators. Steve manages the ORNL fusion materials program.

Edgar Lara-Curzio has received the 2001 Award of Merit from the American Society for Testing and Materials for "his tireless commitment to the technical excellence and introduction of new test methods for ceramics and ceramic matrix composites." The merit award is the highest society award granted to an individual member for distinguished service and outstanding participation in ASTM committee activities. Edgar, who is one of the youngest recipients of the award, also received the honorary title of Fellow.



Lara-Curzio

Michael Gresalfi, an ORNL representative working in Washington, D.C., was awarded the Secretary of Energy's Superior Performance Award, "in appreciation for developing innovative ideas to implement the Secretary's policy on metals recycling." Michael provided senior-policy support to Secretary of Energy Bill Richardson and his Recycle and Reuse Task Force throughout last year.

Life Sciences Division's **Eva Leinart** received the Purina Prolab Technician Award from the Appalachian Branch of the American Association for Laboratory Animal Science. The award is given to recognize outstanding technicians who care for animals used in research. Eva was nominated for this award by her co-workers and supervisor. She is a member of the animal care staff in the Laboratory Animal Resources section of the Life Sciences Division.

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