Documentary features interviews with key engineers, policymakers

In the years after World War II, when the nation’s policymakers determined the US would rely heavily on nuclear weapons as an essential strategic deterrent, they wanted assurances on two fronts: 1) that the weapons in America’s stockpile would always work if called upon; and 2), that the weapons would never, could never, detonate unintentionally, either as a result of accident, equipment failure, or even human malfeasance.

The quest to develop the technologies and procedures that would provide those assurances to policymakers is the story, often epic in scale and decades in the making, of scientists and engineers grappling with challenges no one had ever dealt with before, solving problems no one had ever thought about before, and coming to understand and manage fundamental forces of nature in ways that had never been done before.

Now, a feature-length documentary by Sandia filmmaker Dan Curry brings that larger-than-life story to a wide audience. The 143-minute documentary, Always/Never: The quest for safety, security, and survivability, was itself something of an epic undertaking, involving on-camera interviews over the course of almost five years with dozens of key players in the saga.

(Continued on page 5)

Sandia will help Mexican engineering students learn to design tiny microelectromechanical devices (MEMS), according to a memorandum of understanding recently signed by Sandia and the University of Guadalajara.

The rationale for the agreement is that the economic well-being of Mexico is a national security issue for the US, says Sandia project lead Ernest Garcia (2614). “If we

(Continued on page 4)
That’s that

Happy New Year and welcome back. Right before the break we got some frustrating news about the salary freezes, but the way I look at it is, “Hey, you didn't lose that $600 bucks anyway, did you?”

Seriously, though, there’s no question some folks, notably some top performers, get a bun deal with the pay freeze, but after listening to Paul Romig, the last week’s most important issue and the management response to it, I think he and his team are trying to make a bad situation as fair as possible. To borrow a phrase from Romig, they arrived at what may be “the best least worst” option. Stick with the already promised nonbase distribution (which some people may very well have already spent before the freezes were announced) or a small nonbase available to try to equalize it on at least some of the most egregious inequities created by the freezes. Was that the best option? Who knows? It was certainly arrived at in good faith and may very well be the best least worst decision. Glad I didn’t have to make the call.

A few weeks back, when the whole body imaging, enhanced pat-down issue was burning up the electron on the Web, I came across something that was pretty clever. You recall, I’m sure, that passengers at airports around the country were complaining about how disruptive and intrusive the new TSA procedures were. Most airport officials probably empathized a bit with the complaints but felt that at the end of the day all they could say was, “Sorry, but there’s nothing we can do.”

Officials at Milwaukee’s Mitchell International Airport took a different approach. No, they didn’t waive the new TSA requirement during their busiest hour, but they did waive the enhanced pat-down over the scan (some citing radiation concerns), while 14 percent said they wouldn’t fly at all. The rest said they'd opt for the body scan during their holiday travel. 11 percent would choose the enhanced pat-down over the scan (some citing radiation concerns), while 14 percent said they wouldn’t fly at all. The rest said they'd opt for the body scan during their holiday travel. 11 percent would choose the enhanced pat-down over the scan (some citing radiation concerns), while 14 percent said they wouldn’t fly at all. The rest said they'd opt for the body scan during their holiday travel.

Speaking of the whole body imaging flap, we had a pretty lively discussion about the subject over at our Lab News Interactive poll on the internal web. Turns out that among the 750 or so who took the poll, 55 percent said if given the choice they'd try to fix a technical glitch, and then reducing all of his inspirational words to a series of banal bullet points. The PowerPoint is still waiting around the waterfront, from “This is the worst assault on our freedom ever,” to “Hey, it’s no big deal.” Several folks offered their own suggestions about how to deal with the potential terrorist threat at airports. Here was one rather unique idea: “Mostly in jest and jesting, but I’ve often thought we should invent a tiny device that would detonate the explosives remotely. March all the passengers through a reinforced tunnel one at a time and let the airport terrorists take themselves out. The thing doesn’t even have to work as long as the perception is that it does.”

A couple of years ago, I ran an item about Abraham Lincoln delivering the Gettysburg Address as a PowerPoint presentation. It was a funny and pointed satire, with Lincoln doling out local political attacks, national clashes, and other oratorical gems as an 87-year-old guy tried to fix a technical glitch, and then reducing all of his inspirational words to a series of banal bullet points. The PowerPoint is still waiting around the waterfront, from “This is the worst assault on our freedom ever,” to “Hey, it’s no big deal.” Several folks offered their own suggestions about how to deal with the potential terrorist threat at airports. Here was one rather unique idea: “Mostly in jest and jesting, but I’ve often thought we should invent a tiny device that would detonate the explosives remotely. March all the passengers through a reinforced tunnel one at a time and let the airport terrorists take themselves out. The thing doesn’t even have to work as long as the perception is that it does.”

That’s that
Green Engineering Academy students visit Combustion Research Facility

By Patti Koning

A s Kermit the Frog once lamented, it’s not easy being green. Students in the inaugural class of Livermore High School’s Green Engineering Academy are getting some help in living up to the connotations of that color — one synonymous with money, but now representing the environmental movement — through a partnership with Sandia. Last month, the Academy students and their teachers toured the Combustion Research Facility (CRF) and met the Sandia mentors who will guide their research.

“We are so lucky to have this great program right in our backyard with state-of-the-art technology so the students can see practical applications for the concepts they are learning in the classroom,” says Sue Johnston, an Academy teacher.

Through Lockheed Martin’s Gifts and Grants program, Sandia donated $10,000 to the Academy. Before he retired in December, Ray Ng organized the mentor- mentee matches with the help of 13 Sandians who supports the students and provides two math tutors and a presenter.

Mentors are Ed Allen (8243-1), Larry Carrillo (8257), Lee Druxman (8231), David Franco (8112), Tricia Ghatalaoglu (8365), William Loo (8224), Jerry McNich (8954), Mark Musculius (8162), Debbie Post (8248), Jack Skinner (8226), Elaine Yang (8226), and Derek Young (8229). Patty Hough (8954) and Jennifer Ruggles (8367) will provide math tutoring and Heather Jackson (8222) will give classroom presentations and hands-on lab demonstrations.

“This is really an incredible start to this program,” says Mike Waltz, another Academy teacher. “It’s really more than we had hoped for. The donation allows us to obtain all of the matching grant money available for this school year and the mentors give us a head start on meeting the mentor requirement next year.”

Lawrence Livermore National Laboratory, Schneider Electric, and Chevron Corp. have also provided financial support to the program.

The Green Engineering Academy is a “school within a school” focused on green technology and engineering. Students in the inaugural class of the program experienced an implementation grant of $29,000 last year and $42,000 in the current school year. The program provided an implementation grant of $29,000 last year and $42,000 in the current school year. The mentors will provide guidance and support to the students as they work on their projects for the Tri-Valley Science and Engineering Fair in the spring. LHS student Emily Perry is considering a dance pad that generates electricity for her project. The idea, says Waltz, is to work up to the capstone research project that the students must complete in their senior year.

The 12 mentors from Sandia have 40 hours of paid time to spend with the Academy students. Elaine Yang (8226) says she volunteered to be a mentor because she sees it as a way to give back. “Mentors have made such a big difference in my life and career,” she explains. “That one-on-one interaction is really helpful.”

Derek Young was involved in science fairs and programs like the Science Bowl when he was in high school, so he’s interested in seeing things from the other side. He admits to another ulterior motive. “I have an eight-month-old baby, so I thought I’d get a head start on what to expect in the teenage years,” he says. People work and the equipment they use. We also started building that relationship between the students and the mentors.”

The mentors will provide guidance and support to the students as they work on their projects for the Tri-Valley Science and Engineering Fair in the spring. LHS student Emily Perry is considering a dance pad that generates electricity for her project. The idea, says Waltz, is to work up to the capstone research project that the students must complete in their senior year.

The LHS Academy launched this year with 35 sophomores, half of whom are at-risk, another requirement of the program. Each year, 30 new students will enter the Academy in their sophomore year. “We started with a bigger class this year because we expected some attrition,” says Johnston. “But everyone has stuck with the program and all the students are doing quite well.”

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MEMS agreement

(Continued from page 1)

could help Mexico improve its research and development capabilities, it would help stabilize its economy,” he says.

“Ultimately, the US may be the biggest beneficiary if the MOU contributes to the vitality of the Mexican economy and thereby the stability of the US-Mexican border,” says Gil Herrera, director of Sandia’s Microsystems Science, Technology, and Components Center 1703. “We believe that Sandia will also benefit from the relationship, as we will have new minds challenging the design envelope of our SUMMIT MEMS technology.” Gil is in overall charge of Sandia’s activities in support of the collaboration.

Sandia’s SUMMIT V program, one of the most advanced in the world, will be available to help students design and fabricate six layers of silicon. Each layer adds another level of complexity to the design. MEMS devices currently control light, electricity, or fluid flow in today’s video cameras, printers, record-
Always/Never

(Continued from page 1)

The core Sandia Video Services Department team of Dan Curry, Brent Peterson, and Mark Olona (with additional support from independent videographers Dale Krucic and Dwight Irwin and video engineers Mike Wood and Chad Everett) began production of “Always/Never” in August 2006 with the interview of Bill Stevens at his home in Taos, N.M. The majority of interviews were taped on location across the country in high-definition video to best future-proof the volumes of valuable oral history being recorded. With an eye to very high production value, the interviewing was completed in June 2007.

Dan began combing through the hundreds of hours of footage to begin scripting and editing. At the same time, Brent began the work to create a total of 56 minutes of 3D animation and visual effects used throughout to help illustrate the narrative. During animation and editing, Dan conducted multiple trips to the National Archives in Washington, D.C., to cull from hundreds of hours of rare archival film and thousands of photographs and fill out the visual texture of the film. By late 2008, all 3D-animation developed by Brent Peterson depicts a 1968 incident involving a US Air Force B-52 near Thule Air Base in Greenland.

ments by Los Alamos and Livermore [national laboratories], and additionally, those achievements had to be placed in the context of a much larger historical framework, one shaped by NATO and US policy and military operations, international politics, and world events.”

In telling the Always/Never story, Dan decided to rely heavily on first-person narratives, an approach he had used successfully in US Strategic Nuclear Policy: An Oral History, a documentary he produced for Labs directors Tom Hunter and Paul Robinson in 2005.

A closely held history

The result of Dan’s efforts is a nuclear weapon history that spans the years 1945-1991 and examines high-level geopolitical events of the Cold War and the internal, fascinating, and closely held history of nuclear weapon design and engineering driven by these events. Bill Stevens, Bob Bradley, Ray Reynolds, Leon Smith, Stan Spray, and Dan Summers (pictured on page 1) are among 16 active and retired Sandia designers and engineers who share their stories for the camera.

Speaking of the early 1950s, Bill Stevens recalls, “Nuclear weapons in those days were the product of a demonstration of a brand new capability by Los Alamos and the adoption by the military planners…. In those days Sandia Base was a very interesting place; each military service didn’t want to be left out of the nuclear weapons program, so they had a cadre living on the base, working with the people at the Labs.”

Bob Bradley adds, “This was a period of time when there was a technical push…. We understood the technology, we also understood the limits of the technology, so Sandia was proactive.”

About the early development of the B61, Ray Reynolds recalls, “The design architecture of the system was such that … it allowed for a contemplated set of improvements for achieving improved safety, particularly, as well as improved use control.”

Leon Smith adds, “One of the things that helped us to achieve a high degree of integration was the fact that we had an advanced computer model that enabled us that we could bring together. We had very strong groups in aerodynamics, in nuclear weapons effects…”

On nuclear detonation safety, Stan Spray says, “One thing to think about is [that] safety really means availability: if you have a safe weapon you can deploy it anywhere in the world and not put the public at risk.”

Dan Summers sums up the state of modern nuclear safety in the mid-1970s: “There were units out there that had no modern safety associated with them. It became more and more apparent after Stan’s briefing [Stan Spray’s seminal ‘burned board’ briefing] and people began to really pay attention, [began to appreciate] that we needed to review our entire stockpile and put forth a level of national effort to understand what our level of safety should be.”

DR. STRANGELOVE, the landmark 1964 film starring Sterling Hayden (seen here), captured the Cold War era preoccupation with nuclear weapons and raised troubling questions about use control issues. (Photo used by permission of Columbia Pictures)

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DR. STRANGELOVE, the landmark 1964 film starring Sterling Hayden (seen here), captured the Cold War era preoccupation with nuclear weapons and raised troubling questions about use control issues. (Photo used by permission of Columbia Pictures)
The cHunky Monkeys are transformed, empowered, and energized

“The big thing to remember is that our bodies need a lot less food than our minds do. Your body needs about 1,500 to 2,000 calories a day, but your mind wants 3,000 to 4,000. Once you get your mind under control, your body will take care of itself.”

Gary Moses (4242), talking about his recent weight loss

By Iris Aboytes

G ary Moses and co-workers Phil Sandoval, Tom Rodgers, and team captain Paul Keller, all from Org. 4242, make up the Chunky Monkeys, one of Health, Benefits, and Employee Services (HBE) 2010 Biggest Loser Club teams. In the May 7, 2010, issue of the Lab-Notes they talked about their quest in going from chunky to hunky. If you know or even sort of know them, you know the transformation has taken place.

Coming back to work after the holiday break, talk of New Year’s resolutions lifts Sandra hallways. The general consensus seems to be that healthy eating and exercise hold the key to a healthier and more energized lifestyle. In an effort to help all of us be healthier, the Chunky Monkeys have agreed to tell us how they accomplished their transformation.

When they began the program, the Chunky Monkeys would all eat together every day at lunch. Phil had never been a runner, nor had he gone three miles or done any other types of cardio on Monday, Wednesday, and Friday. He did not want circuit weight training.

“My motivation for the Biggest Loser contest was the fact that I did not want to let my team down,” says Tom. “Besides, I am as competitive as any Sandian, and I wanted our team to win. My big-salad lunches have become salads, and my protein and vegetable dream kept me well-satisfied, no second servings for me. Fresh fruit has become my love of choice.

Gary says, “My body feels younger and stronger. I had noticed that I was getting heavier, and I began taking heartburn medication.”

Gary now eats vegetables that an inch smaller around the neck. Becoming one of the Chunky Monkeys made the difference. “No heartburn medication for me and my blood pressure is way low,” Gary adds.

Gary did a lot of mindful eating. I avoided eating unripe avocados, eating too close to bedtime, and I avoided sweets.

I love blueberries,” he says. “They are a treat for me. I guess it worked for me because I wanted to do it. Each person has to do what works for them. HBE professionals can help you.”

Tom agrees that being part of the team has made a big difference for him. “I hadn’t actually thought about losing weight,” he says. “I just bought bigger clothes. Then I was invited to join the Chunky Monkeys. When I attended the Biggest Loser orientation, HBE professionals stressed committing to the program or not trying at all. That’s when I decided to commit to losing weight. ”

“Being part of the team helped me stay on track,” Phil adds. “Besides, I am as competitive as any Sandian, and I never did. The best part was that I wasn’t winded.”

Phil is a baseball and football coach. “It was great,” he says. “Being part of the team helped me stay on track, provided motivation. I am as competitive as any Sandian, and I never did. The best part was that I wasn’t winded.”

Gary works out three times a week. Jenny Perea from HBE designs different exercise programs for him and changes them so he won’t get bored.

“Your body becomes fit the minute you begin,” Gary says. “My blood pressure and cholesterol are now normal. “When the weight started coming off, I noticed I was doing things my way, there were specific things I would not do. It was not easy letting go of my outdated philosophies. I also had to endure lectures on how my infection, I also had to endure lectures on how my blood pressure and weight was not conducive to my overall wellbeing.”

Gary works out three times a week. Jenny Perea from HBE designs different exercise programs for him and changes them so he won’t get bored. “Your body becomes fit the minute you begin,” Gary says. “My blood pressure and cholesterol are now normal. “When the weight started coming off, I noticed I was doing things my way, there were specific things I would not do. It was not easy letting go of my outdated philosophies. I also had to endure lectures on how my infection, I also had to endure lectures on how my blood pressure and weight was not conducive to my overall wellbeing.”

The Chunky Monkeys joined the Biggest Loser program and took classes related to nutrition and physiology of exercise. “It did not take long for me to be humbled and see that although I was having some success doing things my way, there were specific things I would not do. It was not easy letting go of my outdated philosophies.”

Gary now wears shirts that are an inch smaller around the neck. Becoming one of the Chunky Monkeys made the difference. “No heartburn medication for me and my blood pressure is way low,” Gary adds.

Jenny Perea from HBE designs different exercise programs for him and changes them so he won’t get bored.

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Gary and Phil are equally thrilled with the Chunky Monkeys’ success. They were even more thrilled to learn that the Chunky Monkeys’ success and energy was so contagious that other Chunky Monkeys participated.

“I met the Chunky Monkeys in February 2010 at the HBE’s Biggest Loser Club initial weigh-ins, measurements, exercise, and food intake planning. I was excited to have a team of four men. Statistically, men have a better chance than women of losing more weight due to physiological differences.

The team had a strong commitment and fun relationships with each other. There was ridicule, joking, and very strong camaraderie. We laughed as we worked. I told my co-worker and dietitian Belita Hite (334) this team could win. We did win. They did not, but they lost the most fat and gained the most lean (calorie-scorching muscle) tissue.

The team used home exercise DVDs such as Power90/P90X and Insanity. They walked every day at lunch, joined gym, and started resistance training. Months later, they still walk regularly and are planning a team comprehensive body composition analysis next month.

Even more amazing is the fact that Paul quit gout smoking mid-program. Tom made weekly progress charts and spreadsheets that helped to keep everything straight and everyone accountable. Gary is at the scale every Thursday, and Phil, who initially thought he would not lose as well, went on to lose the highest percentage of body weight, more than 25 percent. Their weight loss was so large that it gave him enhanced everyone’s self-esteem. Their 25 percent. Their success and energy was so contagious that other Chunky Monkeys participated.

By Amy Cincotta, exercise physiologist (3334)

HUNKY MONKEYS — Walking and to be summoned, new team is just working out with a smile. (Photo by Randy Montoya)
Sandia bought more than $500 million worth of goods and services in fiscal year 2010 from New Mexico companies, 40 percent more than in the previous fiscal year, according to a new report from Small Business Utilization Dept. 10222.

The purchases are part of the more than $1 billion spent overall on procurement of goods and services, the 2010 Sandia National Laboratories Economic Impact on the State of New Mexico report shows. The report — released this week at the Sandia-sponsored 2010 Economic Impact Summit — shows the important role Sandia plays in the state and local economy and the community.

“Sandia National Laboratories has a long and distinguished record of encouraging and partnering with highly qualified, diverse small business suppliers who assist us in achieving our national security mission. We are fully committed to continuing this track record,” Labs Director Paul Hommert says.

Outreach efforts make a difference

The increase in money flowing into New Mexico's economy is due to Sandia's outreach efforts — meeting with business organizations, chambers of commerce, and business owners, holding town halls, and hosting a Supplier Engagement Summit where suppliers discussed their needs in working with the Labs, says Don Devoti, manager of the Small Business Utilization Department.

“We're being more transparent in our operations and by letting these companies know we really want their business. I think that exposure and our efforts to open up Sandia and our procurement process to the local community has paid off,” Don says.

Here are some of the numbers showing Sandia's overall impact:

- $1.3 billion was spent on labor and non-contract-related payments.
- $950 million was paid for contract-related payments.
- $68 million was sent to the state of New Mexico for corporate taxes.
- $66 million was spent through procurement card purchases, in which Sandia employees use cards similar to credit cards for low-priced commercial goods and services necessary to conduct business.

Sam Felix, senior manager of Supply Chain Integration Dept. 10220, says the report also shows Sandia's small business advocates encourage buyers to give qualified small businesses opportunities to sell their products and services to Sandia. Nationwide, the Labs spent $552 million at small businesses. Almost $330 million, or 60 percent, of that was spent at small companies in New Mexico.

The Small Business Act mandates that federal contractors utilize small businesses, including those that are small disadvantaged businesses, small businesses owned by women, veterans and service-disabled veterans, and small businesses located in impoverished areas called Historically Underutilized Business (HUB) zone businesses. Overseeing this mandate is Sandia's Small Business Utilization Department, which annually negotiates small business subcontracting goals with NNSA.

Sandia also helps the state's economy through participation in the New Mexico Small Business Assistance (NMSBA) Program. The Sandia NMSBA Program has created and retained 1,549 jobs, decreased operating costs by $45.7 million, increased revenues by more than $82.4 million, and invested more than $17.4 million in expansion efforts and purchases of local goods and services since its inception, according to the report.

And, the Sandia Science & Technology Park, a 250-acre master-planned research park adjacent to the Laboratories, employs more than 2,000 people at an average wage of $71,612.

Sandia employees contributed more than $4.2 million to the United Way of Central New Mexico in 2010. They also logged in more than 100,000 volunteer hours in 2009. And, they donate on average 2,000 books, 23,000 school supplies, 63,000 pounds of food, 433 holiday gifts, and 500 pairs of new shoes to the community each year, the report says.
With a twinkle of intelligence in his eye, Bernard Browne was quick to smile and slow to speak

By Iris Aboytes

Bernard Browne (2915) died on Dec. 31. He was 50 years old and had been a Sandia employee eight years. Bernard joined the Tonopah Test Range team in 2002 after his retirement from the US Air Force. During his career, Bernard demonstrated professionalism, technical capabilities, and pleasant personality. He retired at the immediate respect and admiration of our team and management in New Mexico, says his manager, Robert Sherwood (2915). “He was selected lead and owner of the Telemetry Lab, a section that is critically important to the success of our flight test activities. His performance led me to reflect on our culture and the efforts of two other tactical, non-mobile leaders who had left the lead where he led the efforts of two other tactical, non-mobile leaders.

“His consistently high performance culminated in his selection in 2007 to the Distinguished Technologist level in less than eight years of service with Sandia. His quiet character masked a deep-thinking, fun-loving personality that enjoyed an occasional prank. When our former manager Vern Gabbard retired, Bernard and some of his co-workers presented him with a bobble head replica of our senior manager, an individual Vern spurned with frequency. It was the hit of the party.”

Bobby Weaver (2915) was Bernard’s project leader. “I came to know him well as a very competent worker and as a friend,” Bobby says. “There are only about 20 Sandia employees here at Tonopah, and we work long hours together, 12- to 14-hour days. We also spend about eight hours each week riding in vans to and from Las Vegas to Tonopah. Conditions here are very iso- lated and somewhat primitive. We are away from our homes and families for three days each week. Bernard’s pleasant personality and demeanor made working at the test range much more bearable for every- one and often even fun.”

Steve Ollt (2015) says that Bernard took his work very seriously and was very meticulous. “He represented Sandia’s principle of adlibitum in his interactions with coworkers and customers.” Steve says. “Bernard was a true professional and a very hard worker. His expertise and calm approach will be missed by this organization.”

Joe Miller (2015) worked with Bernard for six years. “He never had a negative thing to say about people, recalls Joe. “Maybe it was because he was a retired Air Force master sergeant, or because he grew up on the tough west side of Chicago and knew not to sweat the small stuff.”

Bernard had the gift of the pen, adds Joe. “He could make his PMF look like he invented the light bulb. He was quiet by trade, but he had a passion for writing. His management, and Sandia, Bernard was as honest as the day is long. When he pulled up into the parking lot at work with his perfectly polished, unblemished BMW, you just knew it was going to be a good day.”

Adds Mike Stearman (2915), “Bernard did enjoy his BMW, and on one occasion let it slip that he had spent the previous eight hours polishing it. “Bernard was very thorough. He was always checking in.”

When Frank left the Labs for another job in the Lockheed Martin family, Dwv. 9000 VP Joe Volpini became the Watercooler’s executive champion. Like Frank, he has embraced the notion that the Watercooler can be an invaluable tool for gathering information that state of the Labs, or, more to the point, the state of Labs employees.

“For 10 years,” Joe says, “the Watercooler has been a forum to share ideas about our workplace. It’s true that many employees have been the driving force behind it. Others have simply expressed ideas and information that they believe the continued readership engagement in the interactive discussions is evidence of active interest in the Watercooler.”

When Watercooler began, it was aimed specifically at the Dwv. 10000 workforce. When Integrated Enabling Services was launched in early 2000s, Watercooler expanded its target audience to include the entire IES community. Today, Jane says, the Watercooler is begin- ning to expand its scope, with articles that address wider Labs issues, issues of interest across the entire community. That is a trend, Jane says, that will continue. Today’s Watercooler has a larger audience than ever, and it offers employees more opportunities to have open conversations.

“I think the Watercooler is unique in that regard, and I believe that it continues to have a significant impact on our workforce,” adds Robert. “He was missed every day he was not at the range. Knowing he will not return leaves a significant void in our team and spirit.”

The Watercooler: 10 years and counting

By Bill Murphy

The Watercooler is up. And it has been for more than 10 years now. When a television program lasts for a decade — think ER or CSI — it’s considered a very sub- stantial hit. By that measure, the decade — think Sandia as an institution to make it always worth the hustle and bustle, they decided to use the still-somewhat new(ish) medium of the Internet, specifically, Sandia’s internal web.

In the very first article for Watercooler, Frank talked about his intent: “[Like] the ancient watering hole, the time-honored watercooler typifies the place where people could take a break, to talk to each other, get some straight talk, and trade the latest rumors. If the boss was engaged with his people, he would join them at the watercooler and deal with some of those issues. ‘I provide some straight talk. Shed light on the rumors. What you are looking at is a reinvention of the watercooler in this internet age. When you click on the Watercooler section, you will be virtually there.’”

Joe, who, with a brief break for other duties — has been the editor, and arguably the driving force, of the Watercooler since its inception, notes that from the very beginning, the idea of the Watercooler was to foster dia- logue and conversation. To make that happen, the com- munity capability was central to the effort. Early on, she says, he cautioned Frank against allowing anonymous comments. Frank disagreed. He felt anonymity, while it might allow some people to engage in some no-account- ability complaining and Sandia-bashing, would also encourage people to feel they could contribute in useful ways without fear of reprimand or consequence.

Frank, of course, carried the day. The comment sec- tion of Watercooler allowed anonymous comment from the get-go, a policy that has been tested a time or two over the years when comments have crossed over an invisible line into the clearly inappropriate.

The Watercooler team (see box) reviews every com- ment, taking a mostly hands-off approach, but when a comment gets personal, when it violates Sandia’s core values — particularly respect for each other — it gets pulled and deleted. It hasn’t happened very often, and almost any reasonable comment, even if it is sharply criti- cal of Sandia and its policies, stands on its own merits.

Jane now agrees that Frank was right: The anonym- ous option has made employees feel they can talk to their senior leadership on an equal footing. “To me,” Jane says, “the Watercooler is the opposite of chain of command. There is an equal amount of all voices, all mixed up together. There is a place for that. And at

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**Mileposts**

**New Mexico photos by Michelle Fleming**

**California photos by Randy Wong**

![Photos](image)

30 years ago . . .

**HERMES II**

**UPDATED** — A new Marx bank of 128 capacitors was recently installed in the Hermes II Radiation Simulation Facility in Area V. The capacitors in the old Marx bank (originally acquired from AWRE in England) were no longer available. The new modules are based on technology developed by Pulsed Power Systems Dept. 4280 and are similar to those used in the Fusion Accelerator. The powerful gamma ray beam produced by Hermes II is used for research and weapon effects simulation studies.

**10 years ago . . .**

A recent development in Intelligent Machine Principles Div. 1411 could pay off big in a number of commercial machining applications. Researchers in the robot sensor lab have developed a sensor that “feels” the edge of machined parts without actually touching the parts. HIRCIS — the High-Resolution Capacitive Imaging Sensor — measures electrical-field changes to produce a surface image of a machined part. [A sample image] shows tiny burrs (raised discontinuities) or cracks in a part.

**50 years ago . . .**

In a number of research and chemical labs at Sandia Laboratory are some fascinating pieces of glass apparatus. Chances are that if it is a special “one of a kind” glass system to perform a special job, it was fabricated in Sandia’s Scientific Glass Section 4224-S. The section’s five glassblowers produce an impressive array of custom pieces for Sandia’s research and development organizations. Included is anything from intricate vacuum systems to tiny precision glass wafers bonded to a wide range of metals and materials.

**40 years ago . . .**

Thirty Sandians were honored for their contributions to the SNAP-27 program. The occasion was the first anniversary of operation of the nuclear generator on the lunar surface. Continuing research has resulted in a way that spacecraft can be sterilized in a short period of time while maintaining temperatures below 212°F. The method utilizes a low nuclear generator on the lunar surface. Continuing research has resulted in a way that spacecraft can be sterilized in a short period of time while maintaining temperatures below 212°F. The method utilizes a low-level of radiation combined with heat. By international agreement, spacecraft are sterilized to reduce the possibility that microorganisms from earth will contaminate other planets.

**20 years ago . . .**

A recent development in Intelligent Machine Principles Div. 1411 could pay off big in a number of commercial machining applications. Researchers in the robot sensor lab have developed a sensor that “feels” the edge of machined parts without actually touching the parts. HIRCIS — the High-Resolution Capacitive Imaging Sensor — measures electrical-field changes to produce a surface image of a machined part. [A sample image] shows tiny burrs (raised discontinuities) or cracks in a part.

**10 years ago . . .**

Sandia and 10 companies have formed a consortium and signed a cooperative research and development agreement (CRADA) to develop and commercialize Cold Spray™ technology. Cold Spray™ is a rapidly emerging technology in which metal or composite powders are accelerated to supersonic velocities in a stream of compressed gas, usually helium, and used to coat a substrate by plastic deformation and bonding.
New NNSA administrative policies (NAPs) in the areas of Physical Protection and Information Security and related in part to vault-type rooms and ACREM — accountable classified removable electronic media — have been added to the management and operating contract between Sandia and NNSA.

The two NAPs, which were added to the Sandia contract in November, replace DOE directives that previously provided the requirements for the same areas. As the first two NAPs to be placed on the contract, these documents take the initial steps of changing how security is implemented across the DOE complex.

The goal is to improve security management, enhance productivity, and apply security that is commensurate with risk. In short, the changes in these two policies remove the “hows” from requirements, and place more responsibilities on the individual sites.

Sandia is required to have the policies implemented within six months from the date the NAP documents were placed in the contract. However, for the first time, the Labs will be removing requirements instead of adding them.

Since June 2009, NNSA’s Defense Nuclear Security program has been working closely with NNSA field sites and DOE’s Office of Health, Safety, and Security to re-examine security requirements and implementation expectations. The process focused on adopting and adapting national standards to create a core set of NNSA security requirements. The primary goal was to develop a concise, streamlined, cost-effective set of security requirements that maintains appropriate protection strategies and practices, and are commensurate with risks.

Another objective was to eliminate the “requirements as a fix” mentality — that is, adding requirements to fix each problem — and return to a focus on security that allows the workforce to be productive while providing effective protection to ensure that national security missions are met. This objective represents a culture shift for how security is done, and will change the roles of oversight and auditing.

The NAPs take a risk-based approach and assign risk acceptance at multiple levels, while ensuring that responsibility occurs at the appropriate level. This approach assumes that resource focus will be based on the importance of assets and recognized associated risks.

Changes affecting the workforce now

Major changes from these two NAPs include:

- The replacement of the term “Vault-Type Room” with the new term, “Closed Area.”
- More than a change in terminology, the redefining of the Labs’ security areas allows for different alarming and testing requirements, and aligns more closely with national requirements and those of other government agencies. This, over time, is expected to greatly reduce maintenance and construction costs.
- Elimination of ACREM and associated accountability requirements: On Nov. 17, 2010, ACREM was designated as no longer accountable and is not required to be entered into an accountability system. All scheduled inventories of ACREM were also cancelled, effective this date. Accountable classified matter is now designated by the type of information — not by the format of the information (e.g., removable media). The only items that are still required to be entered and tracked in accountability systems are the following accountable items, in any format (document or electronic):
  - Top Secret
  - Sigma 14
  - Designated United Kingdom
  - NATO ATOMAL (a marking indicating specific procedures for handling and dissemination)
  - Any matter that requires accountability because of national, international, or programmatic requirements, such as Sigma 20 and NEST/ARG.

Classified administrative specialists will continue to manage accountable items (as defined above) in their accountability systems, and apply accountability requirements to those items.

For up-to-date information about NAP changes related to security, visit: tiny.sandia.gov/NAPs.
"Martin Luther King had the right voice at the right time," says Eunice Young, whose father was named after him. "It is not to diminish the work of others. Dr. King was very strong and charismatic. He had very clear thoughts." Martin Luther King Jr. Day is celebrated annually on the third Monday of January. Dr. King was the chief spokesman for nonviolent activism in the civil rights movement. He was assassinated by a prison escapee in 1968 on the balcony of a hotel as he went to get some fresh air before making a speech. The holiday was officially observed in all 50 states for the first time in 2000.

"My parents told us, 'When a door opens, push through,'" says Eunice. "The civil rights era opened the door." "How dare you close the door," they would say. "People died for your opportunity to go to school. You won't quit." There were no options.

My mother, Alice Edwards, would say that once the door opened we were to take advantage of the opportunity and be the best we could be. "Never forget the people who came before you," she would add. "In all the sacrifices of those who came before them, there were family stories about the huge struggle and loss on many fronts," says Eunice. "They were family stories about my grandparents, where she grew up, and how she and my dad met. She recounted how she and my oldest brother traveled to see my dad. He was in the service and stationed in the south. Once they reached Kentucky, they had to move to the last compartment on the train. The stories made sense to me, because we were about family members. It makes an impression when stories are repeated.

From Martin Luther King Jr.'s example, Eunice learned that she had a voice, and could use it. "A classic example was the Montgomery bus boycott," says Eunice. "You don't have to accept how you are being treated. You don't have to fight to get your way, but you do have to accept the responsibility to change the behavior.

Dr. King demonstrated how to do that.

There were three books Eunice's mom said they had to read. The Soul of Black Folks by W. E. B. DuBois, The Autobiography of Malcolm X, as told to Alex Haley, and the biography of Martin Luther King Jr.

"I did the same with my kids," says Eunice. "I enjoyed working with them on school assignments where we modified the reading list to broaden their understanding of their culture and help others to do the same. The discussions we had over events in their lives related to Dr. King's principles of nonviolence: 'Nonviolence is not passive, but requires courage.' I taught them to find their voice and speak up, and never forget the sacrifices of those who came before them.

"There are some things you have to decide," adds Eunice. "If it is important enough you have to be all in. That was Martin Luther King Jr. He was willing to do what was necessary to call attention to what was wrong, sometimes creating a crisis that would not allow people to be neutral. You had to take a side. In Esther 4:14, the queen says, 'Maybe I was born for such a time as this.' Martin was called to service to address the conditions during the 60s. His voice was powerful and his methods effective. We all have benefited from the legislation that came out of that time. I like that his birthday is commemorated by focusing on service. I hope that we too, live up to our calling in such a time as this."