May 2007

National Nuclear Security Administration Washington, DC 20585

Independent RRW Study Supports NNSA Strategy

Recommendations from a report by the American Association for the Advancement of Science (AAAS) are consistent with NNSA's ongoing plans to move forward with the Reliable Replacement Warhead (RRW) and related efforts to transform and modernize the infrastructure of the nuclear weapons complex.

NNSA's Deputy Administrator for Defense Programs Tom D'Agostino said, "The AAAS study provides a valuable contribution to the discussion on RRW. The RRW program will allow us to ensure the long-term reliability of today's aging stockpile. RRW will also give us the chance to dramatically improve the security and safety of the weapons themselves. In this age of

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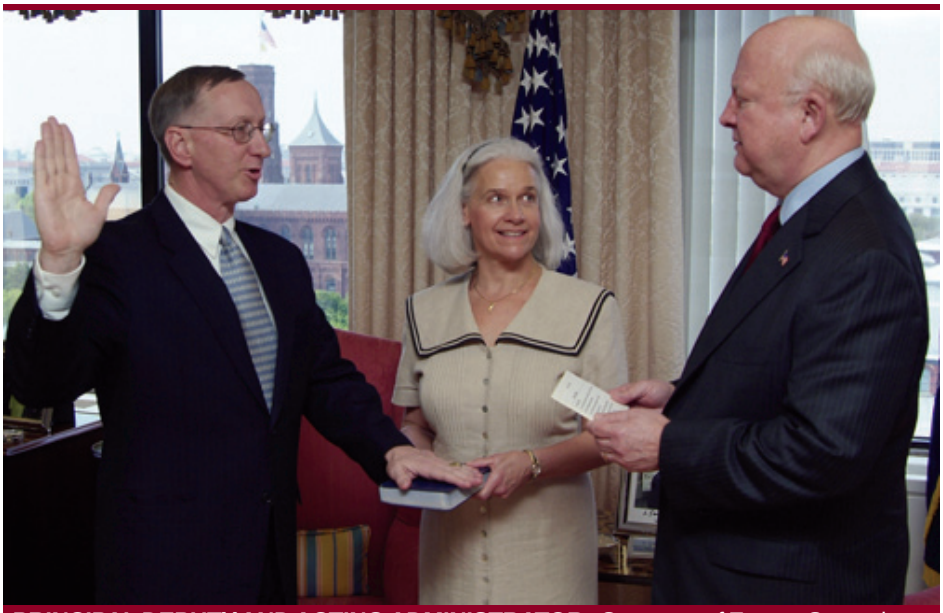

PRINCIPAL DEPUTY AND ACTING ADMINISTRATOR: Secretary of Energy Samuel Bodman (right) administers the oath of office to new NNSA Principal Deputy Administrator Bill Ostendorff. Also participating is Ostendorff's wife Chris, a special education teacher in the Fairfax County Virginia school system. See page two for a message from the acting administrator.

Ostendorff Sworn In As NNSA's Principal Deputy Administrator

Secretary of Energy Samuel W. Bodman administered the oath of office to Bill Ostendorff to be NNSA's principal deputy administrator.

Ostendorff will run NNSA's daily operations, serve as NNSA's top technical advisor, and provide leadership and direction to NNSA's senior staff. He will also be involved in NNSA's interaction with Congress and will implement policies to shape the future of NNSA.

"We welcome Bill to the Energy Department," Bodman said. "NNSA has a critical national security mission and it is important to have him on the job. He brings a tremendous amount of experience and expertise with him and I have full confidence that he will be a valuable member of our team."

Previously, Ostendorff served as counsel and staff director for the Strategic Forces Subcommittee of the House Armed Services Committee. In 2002, he retired from the Navy and joined the Institute for Defense Analyses. From 1999-2002, he served as director of the Division of Mathematics and Science at the United States Naval Academy. From 1998-1999, he commanded Submarine Squadron Six

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Ostendorff Sworn In As NNSA's Principal Deputy Administrator

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in Norfolk, Va. From 1996-1998, he was director of the Submarine Force Atlantic Prospective Commanding Officer School. He served on six submarines, including command of the USS NORFOLK (SSN 714) from 1992-1995.

"I'm pleased to be a part of the NNSA team," Ostendorff said. "We are fortunate to have top notch employees performing important national security missions, including ensuring that our nation's nuclear weapons stockpile is safe, secure, and reliable without testing, and keeping nuclear material out of the hands of terrorists worldwide."

By operational law, the principal deputy administrator becomes the acting administrator when the administrator's position is vacant, as it is now. Therefore, Ostendorff will also assume the duties of the acting administrator of NNSA.

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Message from Acting Administrator Bill Ostendorff

I want to thank all of you for the warm welcome I have received since arriving at NNSA. My first month on the job has only reaffirmed what I learned while serving on the House Armed Services Committee staff: NNSA is a top notch organization with outstanding people performing a mission vital to our nation's security. I truly look forward to working with each of you in accomplishing our vital national security mission.

During my first month here, with the help of the NNSA senior leadership, I developed a list of special focus areas that I intend to pay particular attention to that fall into the following categories:

- What is the future of our nuclear weapons stockpile (and what will be the future role of both the Life Extension and the Reliable Replacement Warhead Programs) and how does that shape our plans for Complex 2030?
- What is the role of federal oversight, especially in the areas of nuclear safety and cyber security?
- How do we move forward smartly and effectively in the consolidation and disposition of special nuclear materials?
- What is the vision for the future for our national security laboratories?
- How do we enhance project management within NNSA?
- What are the proper steps for us to take to enhance NNSA's future as an "Employer of Choice"?

Finally, please be aware that, even before I joined the NNSA, I knew this was a great organization, with a vital and challenging mission. I have tried to visit many of the NNSA offices in headquarters, and have had an opportunity to meet and talk with quite a few of you. As I meet with more and more of NNSA's finest, I am gaining a first-hand knowledge of what has been described as the "One NNSA, One Team" philosophy. I believe that we need to make sure that we don't forget that cooperative and supportive approach to working together as we strive to accomplish our very important missions through professionally executed programs and value-added business operations.

I will visit the rest of the headquarters offices, as well as the site offices, the Service Center, the laboratories and plants over the coming months. I look forward to meeting you and working together in "Getting the Job Done."

Bill Ostendorff
Acting Administrator

Bechtel, UC, BWXT, WGI Bid Wins Livermore Contract

Lawrence Livermore National Security, LLC (LLNS) has been selected to be the management and operating contractor for NNSA's Lawrence Livermore National Laboratory in California.

"Lawrence Livermore National Laboratory is a critical part of our nuclear weapons complex and has been for the last 55 years," Secretary Bodman said. "For the first time since the beginning of the laboratory a new contractor is coming to Livermore. We look forward to working with LLNS as Livermore continues its vital national security work."

LLNS is a limited liability corporation made up of Bechtel National, Inc., the University of California, BWX Technologies, Inc., and the Washington Group International, Inc. The team also includes Battelle Memorial Institute, four small business subcontractors, and Texas A&M University.

Livermore is one of the department's three premier nuclear weapons laboratories. It performs sensitive national security missions, including helping to ensure that the U.S. nuclear weapons stockpile is safe, secure and reliable without underground nuclear testing, and countering the proliferation of weapons of mass destruction. The laboratory has been managed since its inception in 1952 by the University of California.

LLNS will manage and operate NNSA's mission activities under the new contract starting October 1, 2007.

A Source Evaluation Board chaired by Walter Lips carried out the contract competition process culminating with their presentation of a report on their evaluation of the offers to NNSA's Senior Advisor to the Administrator C.S. "Tyler" Przybylek, who made the decision as the selecting official for the contract competition.

Activities to transfer the laboratory to the new contractor have already begun. The basic term of the contract is seven years, and up to an additional 13 years can be earned through successful performance under an award term provision. The contract includes a possible maximum fee of $45.5 million per year to manage the laboratory for DOE and NNSA work, depending on LLNS's quality of performance.

NNSA Announces Small Business Contracts For Global Threat Reduction Initiative

Three small businesses have been selected by NNSA to perform up to $100 million in nuclear nonproliferation work. The contracts are aimed at work to remove and secure vulnerable, at-risk nuclear and radiological materials around the world through NNSA's Global Threat Reduction Initiative (GTRI).

"These contracts will help NNSA accelerate our efforts to keep dangerous material out of the hands of dangerous people," said William Tobey, the head of NNSA's nuclear nonproliferation programs. "We look forward to working with the private sector to increase the cost-effectiveness of our global threat reduction efforts."

NNSA received seven proposals for the threat reduction work in response to a September 2006 solicitation for proposals from small businesses. Of the proposals, it was determined that three offers provided the best value to NNSA. The three small businesses are: Global Threat Reduction Solutions, LLC (GTRS) [a joint venture between TerranearPMC, LLC located in Exton, Pa., and EnergySolutions Federal Services, Inc. located in Oak Ridge, Tenn.]; Professional Project Services (Pro2Serve) located in Oak Ridge, Tenn.; and GEM Technology International Corporation located in Coral Gables, Fla. with an office in Oak Ridge, Tenn.

Each of the small businesses will receive a five-year contract, which will enable them to compete for up to $100 million worth of individual tasks for the GTRI program. Tasks include removing radiological and nuclear material, working at nuclear and radiological facilities to perform security vulnerability assessments, developing security system upgrade design work, installing security improvements, and training facility personnel.

GTRI's mission is to reduce and protect vulnerable nuclear and radiological material located at civilian sites world wide. The department has removed approximately 65 nuclear bombs worth of nuclear material from sites overseas, recovered more than 15,000 excess U.S. and international radiological sources, and secured over 540 radiological sites around the world.

Pacific Northwest National Lab: A

National Security Mission Dates to Manhattan Project

Pacific Northwest National Laboratory (PNNL) is proud of the role it plays in helping NNSA achieve its critical mission objectives. PNNL's unique Hanford national security heritage began during the Manhattan Project and continues to evolve as our country's national security needs change.

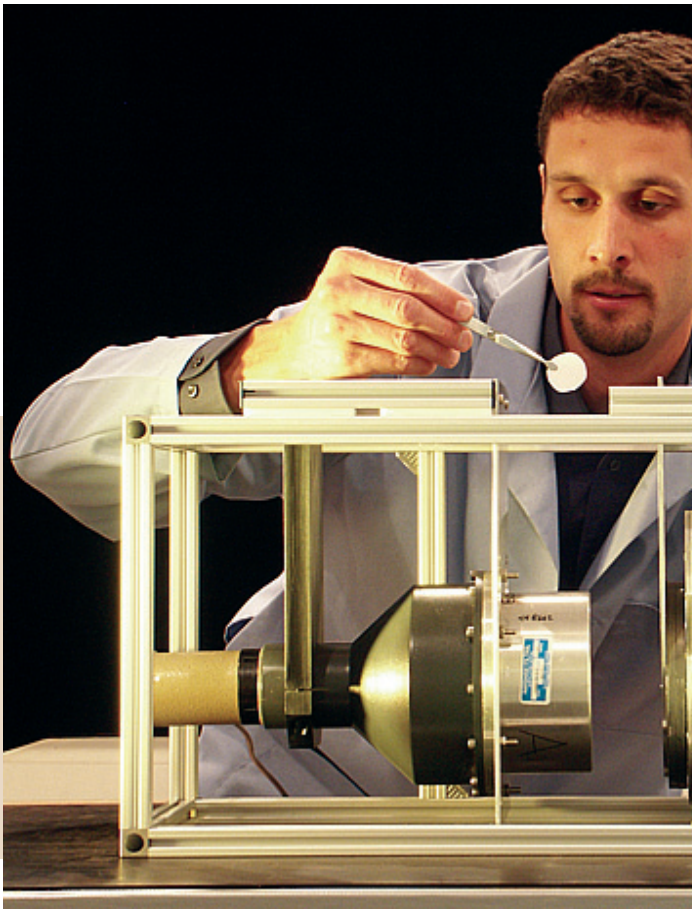
"Our Hanford heritage provides us with a deep appreciation for the nuclear proliferation pathway and unique insights into urgent global security problems," said Gordon Dudder, director of PNNL's Defense Nuclear Nonproliferation Program. The Hanford experience created a strong foundation in nuclear fuel cycle expertise, actinide chemistry, radionuclide fate and transport, low background radiation detection, and nuclear materials safeguards and security.

PNNL's role as a DOE Office of Science multi-program laboratory also provides it with a core science base that is applied to NNSA's mission requirements through a science-based solutions approach.

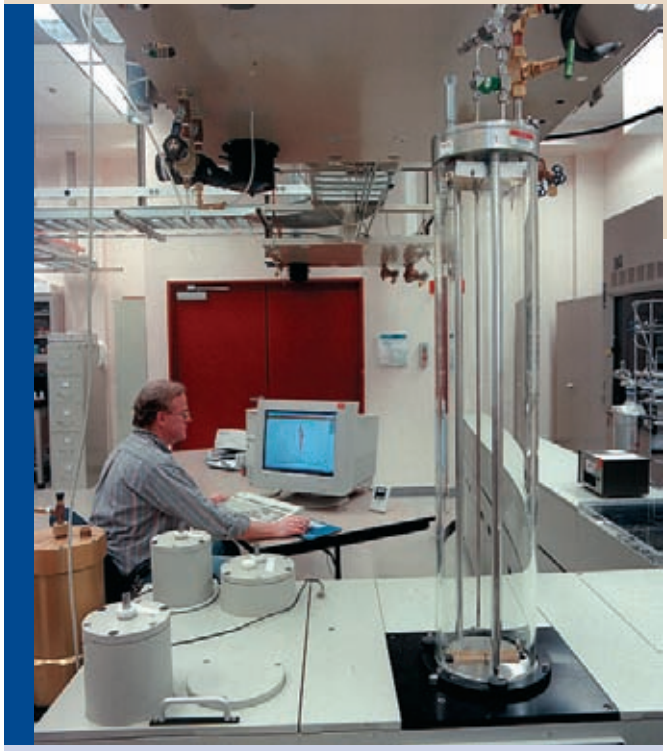
PNNL's support to NNSA falls into three main categories:

- Delivering mission-critical research and development,
- Technical support of nonproliferation policy, and
- Implementation of nonproliferation programs.

Research and development products include innovative approaches to proliferation detection and nuclear explosion monitoring. An infrared spectral data library created by PNNL serves as a gold standard for many users. By fiscal year 2007, the library had catalogued more than 500 chemical signatures and was distributed to 125 U.S. government users and more than 120 public subscribers.



Policy support includes collaborations with universities, nongovernmental organizations, and other countries, such as Russia and China, to develop sustainable nonproliferation infrastructure and improved export control programs. In addition, PNNL draws on its strengths to support energy security, the global expansion of

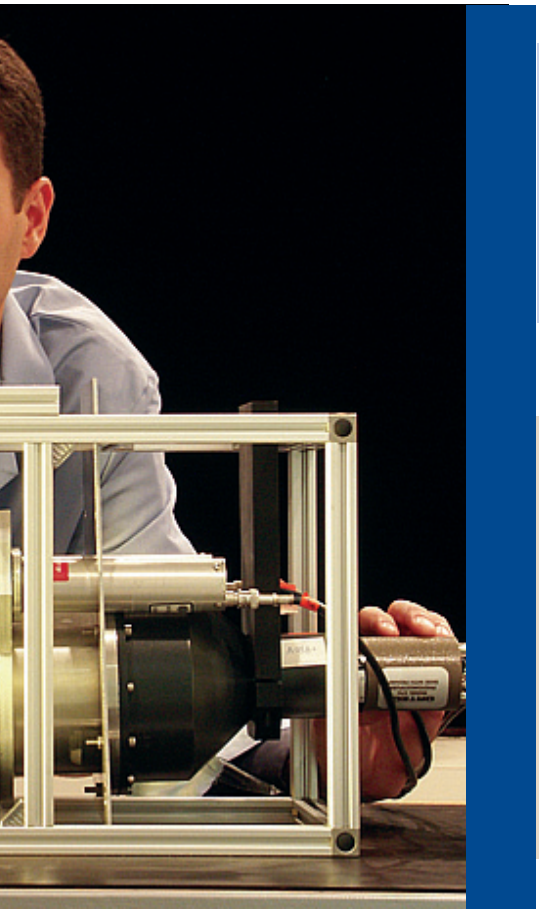


SPECTRAL LIBRARY: PNNL scientists have developed a spectral library with the unique signatures of more than 500 chemicals that could be used to make weapons, using a world-class infrared spectrometry laboratory in the DOE Environmental Molecular Sciences Laboratory.

Heritage of Nonproliferation Support

nuclear energy and nonproliferation treaty activities.

PNNL utilizes its proven program management and technical expertise to help implement NNSA's nonproliferation programs such as the Megaports and International Radiological Threat Reduction (IRTR) programs. The laboratory leads implementation teams in 22 countries, helping NNSA address the complex and dynamic environments and managing stakeholder concerns. It also serves as the lead training laboratory for NNSA's Second Line of Defense program, conducting more than 20 training courses in weapons of mass destruction proliferation prevention last year. In IRTR, PNNL supports the deployment of implementation teams to 38 countries spanning five continents in securing high-activity radioactive materials.



DATA ANALYSIS LEADER: Pacific Northwest National Laboratory is a leader in multi-coincidence detection systems and data analysis methods for trace radionuclide analysis.

The laboratory envisions a strong future supporting NNSA and the national security community. It has also developed a strategy to nurture the next generation of nonproliferation scientists and sustain the capabilities critical to NNSA. As part of this strategy, construction is expected to begin this summer on a new physical sciences facility that will sustain the radiation detection, materials science, and actinide chemistry and processing capabilities at the heart of PNNL's nonproliferation mission support.

Enabling Production of Tritium

PNNL has a defense programs role in addition to its nonproliferation activities. The first tritium to be extracted from the now-operational Tritium Extraction Facility (TEF) at the Savannah River Site (SRS) will come from target rods designed and developed over the past 10 years by scientists at the laboratory.

PNNL researchers led the technical and engineering effort behind the design, manufacture, testing and production of the Tritium Producing Burnable Absorber Rods (TPBARs) that will be processed at the new facility. The TPBARS technology will ensure the United States has a supply of tritium to extract for maintaining the U.S. nuclear weapons stockpile.

"It was a significant technical challenge," said Cheryl Thornhill, PNNL program manager. "We were able to draw on our reactor operations and strong materials background to develop target rods that work effectively in the higher temperatures of a light water reactor."

PNNL scientists designed target rods using lithium aluminate ceramic encased in nickel-plated zirconium getter and then enclosed in an aluminide-coated stainless steel cladding tube. The TPBARS are 12-foot-long rods that absorb excess neutrons in the reactor core. During the irradiation process, the lithium is converted to tritium, which is collected by the getter. The rods are then removed and tritium extracted.

A large quantity of rods - 240 - was deployed at the Watts Bar plant in 2003 then were removed and shipped to SRS in 2005. Those rods are being extracted at TEF.

PNNL continues to refine the TPBARs design to further reduce their already low permeation rate, or rate at which curies leach through the rods during the 18 months of irradiation. While permeation is expected, the laboratory's latest efforts would enable Tennessee Valley Authority to irradiate larger numbers of rods while meeting strict environmental release criteria.

OST Places Second in 2007 World SWAT Challenge

NNSA Office of Secure Transportation (OST) Federal Agents from Albuquerque, N.M.; Amarillo, Texas; and Oak Ridge, Tenn. finished second overall in the 2007 World SWAT Challenge, an international competition held recently at Camp Robinson, Ark. The event included a total of 28 Special Weapons and Tactics (SWAT) teams from the U.S., Aruba, Germany, and Canada.

SWAT CHALLENGE TEAM: Left to right, Josh Scherrey, Brian Nestler, Mark Hulihan, Travis Sims, Scott Lykens, and Tate Moots.

Each of the teams had ten members who rotated through the physically challenging events, but because of mission commitments, the OST team had only six members - Josh Scherrey (Team Captain, Fort Chaffee), Brian Nestler (Western Command), Mark Hulihan (Eastern Command), Travis Sims (Central Command), Scott Lykens (Eastern Command), Tate Moots (Western Command) - which resulted in each individual having to compete in every event.

The three-day competition included handgun, rifle, shotgun, and sniper rifle marksmanship events. Each event tested the competitor's physical fitness ability with obstacles courses and 175-pound dummy carries while wearing full tactical gear.

This is the second World SWAT Challenge appearance by OST, which placed fifth in 2006. The 2007 World SWAT Challenge will air on Versus TV on July 1.

RRW Study Supports NNSA Strategy

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terrorism and uncertainty, America should have the smallest, most secure and most reliable stockpile possible - RRW will give us that opportunity."

The AAAS study identified risks in sustaining the current, aging nuclear weapons stockpile by either extending the life of the legacy warheads or replacing them with RRWs. It concluded that "pursuing the initial phases of this [RRW] path could be a prudent hedge against the uncertainties of an all-legacy future and an opportunity that might result in the creation of a better long-term posture." The study also pointed out that RRW "could lead to a final design that is certifiable without a nuclear test."

The report also discusses the importance of moving forward with NNSA's efforts to modernize and transform the aging nuclear weapons complex, known as Complex 2030.

"Several of the AAAS report's recommendations reaffirm our ongoing plans to study the RRW concept and move forward with our modernization and transformation efforts, which will lead to smaller, more efficient and more secure nuclear weapons facilities", said D'Agostino.

Specifically, the report recommends changes at the Pantex Plant "to accommodate the weapons throughput necessary for a reasonable range of stockpile options and development of a plutonium strategy that can produce pits in reasonable quantities on a timely basis." NNSA is already implementing both of these recommendations with demonstrated progress.

NNSA's "Pantex Throughput Improvement Plan" started last year and has substantially increased its capacity for warhead assembly and disassembly operations. This plan will lead to a 50 percent increase this year in the dismantlement of Cold War-era nuclear warheads. Moreover, this year NNSA will deliver the first production-certified plutonium pit to the stockpile in nearly two decades.

D'Agostino said that NNSA officials will review the report's recommendations, and also noted that the report validates NNSA's current plan to develop a detailed cost and schedule plan for RRW.

"The next step, before we go any further and seek approval from Congress to begin engineering development, is to answer questions about RRW's cost and timeline," he said.

Los Alamos National Lab W76 Team Receives Defense Programs Award

DP AWARD TEAM: Members of the LANL W76 team are (left to right): Steve Goodrum, NNSA; Marty Schoenbauer, NNSA; Maurice Sheppard, LANL; Cetin Unal, LANL; Gary Wall, LANL; James Owen, LANL; Dave Crandall, NNSA.

NNSA's Los Alamos National Laboratory W76 Team recently completed a major milestone by closing the long-standing polymeric Significant Finding Investigation (SFI). This SFI closure required execution of numerous engineering tests, an extensive suite of dynamic testing, development of engineering and physics computational models using the latest Advanced Simulation and Computing codes and application of a rigorous Quantification of Margins and Uncertainties approach to evaluating performance impacts. The work done by the W76 team was aided by significant efforts of the Science and Engineering Campaigns including Primary Assessment Technologies, Weapon Systems Engineering Assessment Technology, and Enhanced Surveillance. Coordination with other weapons complex sites was also essential, with polymeric surveillance data from the Kansas City Plant and centrifuge test facilities run by Sandia National Laboratories. NNSA recognizes the tremendous efforts involving both engineering, science and modeling communities for the past eight years in addressing and closing out this SFI. This SFI closure is an excellent example of the ongoing efforts across the nuclear weapons complex to maintain a safe, reliable and effective nuclear deterrent.

Rapid Fire Pulse Brings Sandia Z Method Closer To Goal Of High-Yield Fusion Reactor

A circuit from Siberia that computer simulations say should be able to deliver enough power to produce the long-sought goal of controlled high-yield nuclear fusion, and do so every few seconds, is being tested on the Z machine at NNSA's Sandia National Laboratories in New Mexico.

Rapid bursts are necessary for electrical generating plants to be powered by inertial confinement fusion and had not been thought achievable until now.

"This is the most significant advance in primary power generation since the invention of the Marx generator," said Keith Matzen, director of Sandia's Pulsed Power Center. Marx generators are giant capacitors that store and discharge large amounts of electrical current. They were invented in 1924.

The new system, called a Linear Transformer Driver (LTD), was created by researchers at the Institute of High Current Electronics in Tomsk, Russia, in collaboration with colleagues at Sandia.

Funding for Z experiments at Sandia is mostly for defense purposes. Its experiments are used to generate data for simulations on supercomputers that help maintain the strength, effectiveness, and safety of the U.S. nuclear deterrent. Even without its rapid repetition capability, a powerful LTD machine would better simulate conditions created by nuclear weapons, so that data from the laboratory-created explosion of Z firing could be used with greater certainty in computer simulations regarding nuclear weapons.

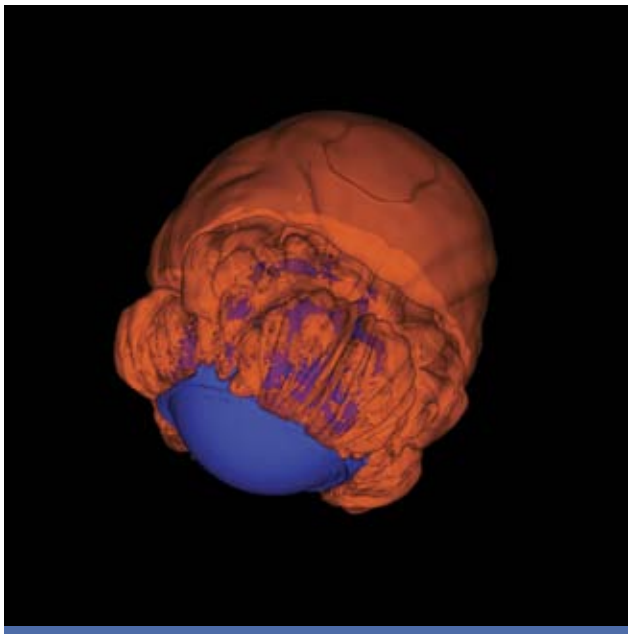
Fired repeatedly, it could become a fusion machine that could form the basis of an electrical generating plant within a couple of decades, providing humanity unlimited electrical energy from cheap, abundant seawater. It would have to deliver energy to fuse pellets of hydrogen every 10 seconds and keep that pace up for millions of shots between maintenance. The circuit is easily able to fire every 10.2 seconds in brief, powerful bursts.

NNSA Supercomputing Plays Stellar Role In Simulation

An important step toward revealing the secrets of the universe's dark energy has been accomplished by blowing up a white dwarf star in a three-dimensional computer simulation of unprecedented detail. NNSA and academic researchers hope a better understanding of such supernovae will provide insight into the mystery of dark energy, an unknown force that is pushing apart the cosmos and accounts for two-thirds of the aggregate energy in the universe.

The three dimensional simulation was conducted by a team at the University of Chicago's Center for Astrophysical Thermonuclear Flashes (Flash Center) with the assistance of Lawrence Livermore National Laboratory computer scientists from the NNSA's Advanced Simulation and Computing (ASC) program. The simulations were run on high performance computers at Lawrence Livermore and Lawrence Berkeley national laboratories.

Significant computing resources and funding for these Flash Center simulations and supporting research were provided principally by NNSA through the ASC Academic Strategic Alliance program (ASAP), with support from DOE's Office of Science.



SUPERNOVAE: Computer simulation of a white dwarf star exploding.

Initiated in 1997, the ASAP program has centers of excellence at five universities to focus on extremely sophisticated computational science problems. Research conducted through these university partnerships helps to support NNSA's science-based Stockpile Stewardship Program, which uses many tools, including computer simulations, to ensure the U.S. nuclear weapons stockpile is safe and reliable in the absence of underground testing.

Athough the computing problems tackled by the centers do not involve nuclear weapons research, the computational and computer science, methodologies and tools developed do provide tremendous benefits to NNSA in particular, and strengthen large-scale, simulation-based scientific and engineering research and education in academia in general

In Memoriam: Michael Rutkowski

Michael Rutkowski, a National Security Technologies (NSTec) employee with Nevada Test Site Los Alamos Operations since 2002, died in late April as he came to the aid of a person in need. Michael was traveling by car with his wife Araceli, when he saw a man in a truck attempting to run over a woman who was walking on the highway. He pulled over to come to her aid, and as Michael rushed toward her to offer protection, the woman's assailant ran him over.

A dedicated electrical engineer, Rutkowski worked on fiber optic design and designed and built fiber optic receivers for VISAR on Unicorn, a subcritical test. His latest project was to design and build Photon Doppler Velocemetry data for Thermos, a plutonium test, and powder gun experiments, which he told others was the best job he ever had. He was able to define a vision of the kind of electronic instrumentation that NSTec should be designing, and he felt that he was making a significant contribution to the welfare of the United States.