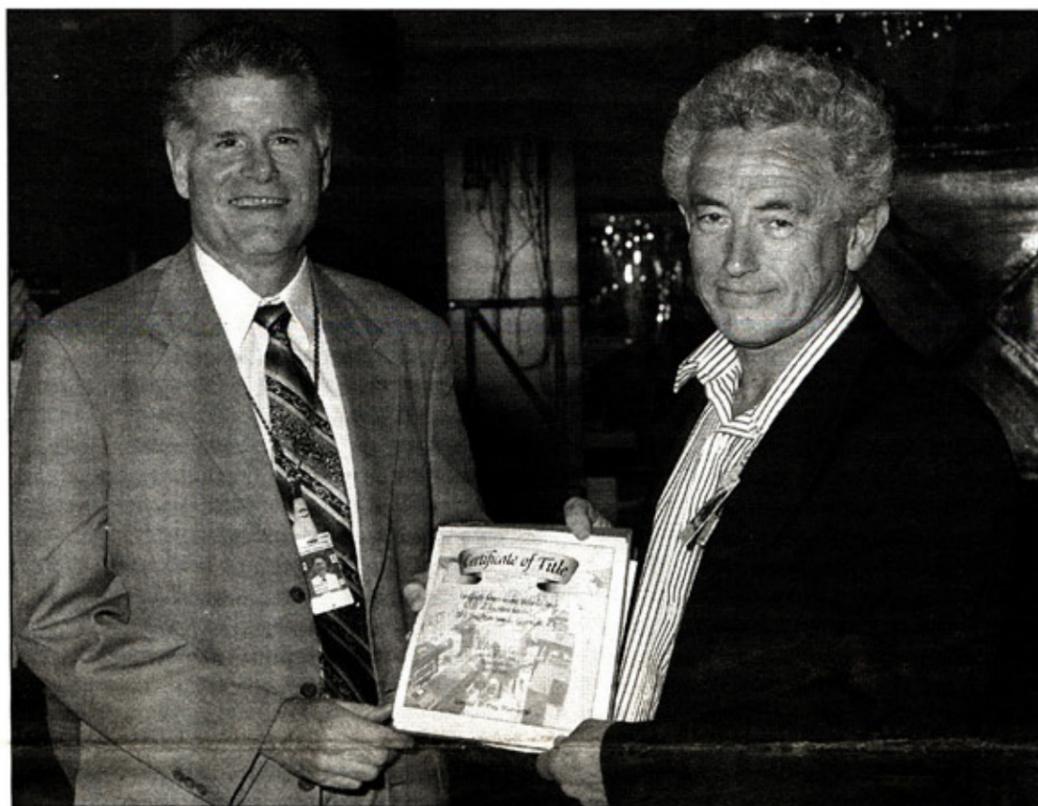


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BRYAN QUINTARD/PUBLIC AFFAIRS

Jeff Quintenz (left), the ICF manager for Sandia, was presented by Joe Kilkenny, Lasers deputy AD, with a mock certificate granting Sandia Albuquerque ownership of Beamlet.

Sandia next in line for Beamlet

By Lynda Seaver

NEWSLINE STAFF WRITER

By now, bits and pieces of Beamlet are being broken down, boxed up and carted off to Sandia Albuquerque, where the inertial confinement fusion laser will find a second life taking X-ray pictures of plasmas.

Beamlet, a prototype laser beam for the

National Ignition Facility, fired its final shot last Friday. The 100-foot-long laser was built in 1994 and has been used since then to serve as a proving ground for NIF. That mission accomplished, Beamlet is now being dismantled to make way for a facility to clean and assemble NIF's giant ampli-

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Supervisor training courses for sharpening management, communication skills

Two new management training classes are giving Laboratory supervisors the opportunity to strengthen their communication, performance management and conflict resolution skills, and develop a fuller understanding of their roles and responsibilities.

The classes — "Supervision I: Roles, Responsibilities and Resources," and "Supervision II: People, Performance and Problem Solving" — were developed by Human Resources at the request of the Senior Management Council.

Spurring development of the classes was a recommendation by the Diversity Action Steering Committee for more comprehensive management training. Further strengthening the recommendation was an acknowledgment by senior managers that a changing work environment, "requires supervisors to manage, motivate and guide others more effectively, as well as become well-versed in the applicable legal and compliance issues and policies," as Deputy Director for Operations Bob Kuckuck stated.

Taught by senior functional managers, "Supervision I" examines legal, contractual and policy requirements in the areas of financial management; ES&H; operations, and computer security; security awareness (SAFE); classification; procurement; business services and human resources. Participants in the two-day class also learn where and how to get help when faced with difficult business decisions.

Since the need for Supervision I was greater than originally anticipated, senior managers are instructing twice as often as expected, Kuckuck said. "The managers have risen to the challenge and are committed to delivering this important information to supervisors," he said. "The participants really enjoy hearing from the



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fiers.

Sandia Albuquerque will now incorporate the \$30 million laser, renamed Z/Beamlet, into its Z Pinch Facility, where it will be used to create a bright X-ray source for taking images of the plasmas produced by the Z machine.

An official transfer of the laser to Sandia, as well as a closing ceremony for the members of Team Beamlet, was held in the laser bay Tuesday. The event was hosted by Scott Burkhard, Beamlet engineering and operations manager, who officially turned over the "key" to Beamlet to Sandia.

"This has been a remarkable machine built and run by remarkable people," summed up Jack Campbell, Beamlet construction leader. Campbell was one of several speakers who recalled the myriad milestones achieved by Beamlet as well as its crew.

Yet Campbell said his favorite will always be "back in 1994, when we reached NIF fluences, that's when we knew the design was going to work."

Beamlet was designed in 1991 after a National Academy of Sciences report suggested a prototype beamline be constructed to prove the principles of the NIF laser. NIF will be a cornerstone of the Stockpile Stewardship Program, which must maintain the safety and reliability of the nation's nuclear arsenal in the absence of actual testing.

Beamlet provided the first demonstration of the new technology needed to realize fusion laser performance far exceeding that of Nova at a much lower cost per unit of energy delivered to the



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During its four years of operation, Beamlet was a training ground for the NIF staff. Many of the Beamlet team members will be transferred to NIF.

target.

In its four years of experimentation, Beamlet proved the principle of the new multipass cavity architecture using a full aperture optical switch — a critical enabling technology for NIF — multi-segment amplifiers, and it showed that very small focal spots can be produced using a deformable ("rubber") mirror to correct the beam. Beamlet experiments have been devoted to quantitative studies of beam propagation, frequency conversion, pinhole design, NIF optical materials and components, and producing the power and energy levels required for a NIF beam.

It has also served as a proving ground for the rapid-growth KDP crystals that will be used to convert the fundamental infrared wavelength of the laser beam to ultraviolet.

"Through Beamlet, we thoroughly

checked out the NIF laser design, learning things today rather than in 2001, when the first NIF beam is turned on," said Howard Powell, program leader for Laser Science and Technology.

Beamlet has also been used as a research tool by French scientists, who used the NIF prototype for France's Laser Megajoule, which is under construction in Bordeaux. Finally, Beamlet served as a training ground for the staff that will operate NIF.

All of these facts were pointed out repeatedly during the closing ceremony. Powell also used the gathering to honor key laser scientists within the Beamlet project: John Murray, who wrote the white paper convincing the National Academy of Sciences to green-light Beamlet and led its design; Bruno Van Wonterghem, "the tireless" activation physicist in charge of its early

testing; and Paul Wegner, who performed detailed experiments on Beamlet's power limits, frequency conversion and focusing abilities.

That Beamlet will find a second life at Sandia "is a marvelous use of taxpayer dollars," said Joe Kilkenny, deputy AD for Lasers. Kilkenny likened the transfer of Beamlet to a commencement ceremony, saying "we are sorry to see it go, but we look forward to seeing it again."

He then presented Jeff Quintenz, ICF program manager at Sandia, with a mock certificate of title and the right to haul away Beamlet, quipping, "Jeff, you did rent a full size car or truck?"

Over the next six weeks, engineers from Sandia and Livermore will dismantle and ship Beamlet to Albuquerque. The laser is expected to be up and running in a year.

Sandia's Z machine is used for stockpile stewardship experiments by means of electrical generation of high-energy density conditions in small targets. Beamlet will be used to create a bright X-ray source behind the Z machine target during experiments. These X-rays will penetrate the target and be collected to obtain direct images of objects inside the target.

"The critical missing diagnostic on Z today is an X-ray backlighter," explained Quintenz. "Beamlet's proven performance history will allow us to fill that gap exceedingly well."

"Z/Beamlet experiments will support NIF's expected success and demonstrate what would be possible on the X-1 machine, a proposed follow-on to the Z and NIF," Quintenz added. "This collaboration between Livermore and Sandia is another example of successful teamwork between the national