



National Aeronautics and Space Administration



LAGNIAPPE

John C. Stennis Space Center

Volume 9 Issue 10

www.nasa.gov/centers/stennis

October 2014

NASA celebrates 'huge success story' with engine installation

An Aerojet Rocketdyne AJ26 rocket engine is lifted into place on the E-1 Test Stand on Oct. 1 in preparation for a late-month hotfire test. The engine installation marked a milestone following repair of the test stand, which suffered damage from a fire during an AJ26 test in May. AJ26 engines are used to power Orbital Sciences Corporation's Antares rocket on commercial cargo missions to the International Space Station. **See page 3.**



Stennis kicks off 2014 Combined Federal Campaign effort

See page 5



“Every generation has its defining moments that make it unique and special. ... I believe we are perfectly positioned to be the next Greatest Generation.”



From the desk of
Freddie Douglas III

Director, Safety & Mission Assurance Directorate, Stennis Space Center

The last few Lagniappe senior management columns touched on how things have changed (typewriters to computers) and how certain elements of our culture bind us together in unique and special ways (football games). Extending this theme a little, we are not flying the space shuttle anymore, yet the systems that will take us to asteroids and to Mars require the “can-do” spirit that is the trademark of the Stennis workforce.

Every generation has its defining moments that make it unique and special. The generation that won World War II is commonly referred to as the Greatest Generation. I was told by a former Stennis center director that his generation, who experienced Hurricane Camille, and my generation, who experienced Hurricane Katrina, would have something similar. These were significant emotional events (SEE) that shaped the thoughts, behaviors, norms, etc. for these groupings of people.

For us, I believe we are perfectly positioned to be the next Greatest Generation. Our collection of SEE includes the loss of space shuttle Columbia, the end of the Space Shuttle Program and the impacts of Hurricane Katrina. It also includes the excitement of being multi-faceted in concurrently providing propulsion test services for commercial and government programs and being offered as the model federal city for all others to replicate.

As important as those events and situations are, one of the most important and defining for our future is

the successful movement of the Main Propulsion Test Article (MPTA) structure on the B-2 Test Stand.

The work performed by the Stennis Space Center team on August 8, 2014, in moving the MPTA into a new position in order to support Space Launch System stage testing is monumental (see August issue of Lagniappe). It sets the course to demonstrate the flight worthiness of the core stage vehicle. It is the interlock that affirms forward progress in achieving the complex missions ahead of us in exploring space.

The team performed the work as planned and completed it all safely. In my mind, this marks the point in time and place where this collection of Stennis Space Center employees moved into greatness. Just like the World War II victors or the generation that experienced Hurricane Camille, we are driven by being part of something bigger than ourselves and driven by the opportunity to make a difference.

We have had some challenges; we have met them; and, we are that much the better for them. Because we have met them, our mettle is sharper and our resolve redoubled. As a result, we help ensure the future of America and a better life on and off this planet for our families and the world.

Lagniappe is published monthly by the Office of Communications at NASA's John C. Stennis Space Center.

Access monthly copies at: www.nasa.gov/centers/stennis/news/publications/index.html

Contact information – (phone) 228-688-3749; (email) ssc-pao@nasa.gov; (mail) NASA PUBLIC AFFAIRS OFFICE,

Attn: LAGNIAPPE, Mail code IA00, Building 1100 Room 304, Stennis Space Center, MS 39529

Managing Editor – Paul Foerman

Editor – Lacy Thompson

Staff Photographer – Danny Nowlin



Installation of AJ26 engine marks return to testing for E-1 Test Stand

Installation of Aerojet Rocketdyne AJ26 rocket engine No. E18 on the E-1 Test Stand at NASA's Stennis Space Center on Oct. 1, marks a "huge success story" thanks to the diligent efforts of center work teams.

In late May, it was estimated the E-1 stand would be unavailable for testing until December, even with accelerated repair efforts. Time was needed to repair damage caused by a fire that occurred during acceptance testing of an AJ26 engine in May. The event caused extensive damage in the E-1 test cell area, particularly to electrical, instrumentation, camera and cable systems.

Despite the damage to the stand, Aerojet Rocketdyne and Orbital Sciences Corporation needed to resume testing in October in order to continue certifying AJ26 engines for scheduled cargo flights to the International Space Station. Orbital is resupplying the space station under a Cargo Resupply Services contract. A pair of Aerojet Rocketdyne AJ26 engines tested at Stennis power the launch of an Orbital Antares rocket on each of those flights.

The cargo flight schedule meant repair of the test stand had to be completed much earlier than planned. "That was a real challenge, and a lot of people stepped up to the plate to meet it," Stennis AJ26 Project Manager Randy Holland said. "This story is about the people, not any efficiency-increasing process. The people are the ones who really made the difference."

NASA engineers and contractors with the Lockheed Martin Test Operations Contract Group and the Jacobs Technology Facility Operating Services Contract Group worked together to plan and coordinate tasks. Crews worked 10-hour days and many weekends to complete the tasks. The Aerojet Rocketdyne team at Stennis took responsibility for repairs and replacement with engine-specific ground support equipment that was damaged.

"A sense of ownership took over," E-1 Test Stand Director Skip Roberts said. "A lot of people truly have a sense of ownership for this stand. They wanted not only to restore it but to make it better. That's what they did."

In addition to repairing test cell systems, crews



(Top photo) Members of work teams involved with repair of the E-1 Test Stand following damage from a May fire stand at the facility. Thanks to team efforts, repair work on the stand was completed weeks earlier than initially estimated.

(Right photo) E-1 Test Stand team members help move an Aerojet Rocketdyne AJ26 engine into place on the stand. Acceptance testing of AJ26 engines to power Orbital Sciences Corporation flights will resume in late October.



were able to implement several improvements, such as extending the water deluge system used during testing, enhancing protection of trunk cables and moving items to better locations based on actual test experience. They also took some risk mitigation steps to protect the stand from future mishap events.

One of the biggest challenges was ensuring test stand flow meters could be calibrated in time to meet the deadline. "Without those, having the rest of the facility ready to go would not have mat-

tered," Holland explained. Thanks to a NASA team working closely with the calibration company, the flow meter work was completed in time.

The same timing challenge extended to other stand components, many of which had to be reconditioned or repaired. "Meeting the October schedule assumed being able to repair a lot of components rather than procure new ones," Holland explained. "The Stennis component shop was able to do that. That was instrumental to the success."

Engineers also made an early assumption that damage was contained in the test cell and the basic stand structure was sound. An early facility structural assessment proved this assumption was good, which meant no time-consuming structural repairs were needed.

Coordination of the Stennis crews with Orbital and Aerojet Rocketdyne teams also was key. At every point, Orbital provided the support and funding needed to keep repairs moving forward. Regular checks were made among teams to ensure

that expectations were being met. "This really was an above-and-beyond effort by everyone," Roberts said. "That's the best way to describe it."

The effort continues with completion of final work tasks and normal test stand reactivation activities. Engineers will conduct a test operations wet dress rehearsal to verify readiness for engine testing. Then, in late October, a full two months earlier than initially expected, the E-1 Test Stand will roar to life once more.

2014 Combined Federal Campaign under way at Stennis

Stennis Space Center employees launched their annual Combined Federal Campaign effort Sept. 24 with a kickoff ceremony that featured remarks from Stennis Director Rick Gilbrech (page 1 photo), Stennis CFC Chair Jeffrey Askew (below, top photo) and Greater Mississippi CFC Director Linda Steinhauser (below, bottom photo). During the kickoff event, Stennis employees were able to gather information about area service organizations supported by CFC gifts. (Top center photo) Jody Dixon of the Government Printing Office and Kim Maddox of the Naval Oceanographic Office speak with Brooke Crumpton of United Way of South Mississippi. (Bottom center photo) Nicole Borchert of NASA speaks with Zachary Rhodes of the Gulf Coast Salvation Army. Two weeks after the kickoff, Stennis employees engaged in a chili cookoff competition to highlight CFC and promote giving. NASA employees sampled team chili entries and voted on winners (far right photo). Winners included Brennan Sanders, Center Operations Directorate, first place; Sallie Bilbo, Office of Communications, second place; and Ranise Brown, Office of Human Capital, third place. CFC is the largest annual workplace charity effort in the nation.



Stennis Business Development Manager John Bailey (right) and Stennis Deputy Director Jerry Cook sample a team entry in the CFC chili cookoff.

Chili Cookoff Winners



(L to r) Todd Mannion, Bo Clarke, Brennan Sanders.



(L to r) Samone Faulkner and Sallie Bilbo.



(L to r) Jeanie Frederick and Ranise Brown.



2014 Goal
\$195,000

FULFILLING NASA'S EXPLORATION MISSION

NASA in the News

Send your name on Journey to Mars

If only your name could collect frequent flyer miles. NASA is inviting the public to send their names on a microchip to destinations beyond low-Earth orbit, including Mars. Your name will begin its journey on a dime-sized microchip when the agency's Orion spacecraft launches Dec. 4 on its first flight, designated Exploration Flight Test-1. After a 4.5 hour, two-orbit mission around Earth to test Orion's systems, the spacecraft will travel back through the atmosphere to splash down in the Pacific Ocean. After returning to Earth, names will fly on future NASA exploration flights and missions to Mars. With each flight, selected individuals will accrue more miles as members of a global space-faring society. The deadline for receiving a personal "boarding pass" on Orion's test flight closes Oct. 31. The public will have an opportunity to keep submitting names beyond Oct. 31 to be included on future test flights and future NASA missions to Mars. To submit your name to fly on Orion's flight test, visit: <http://go.usa.gov/vcpz>. Join the conversation on social media using the hashtag #JourneyToMars.

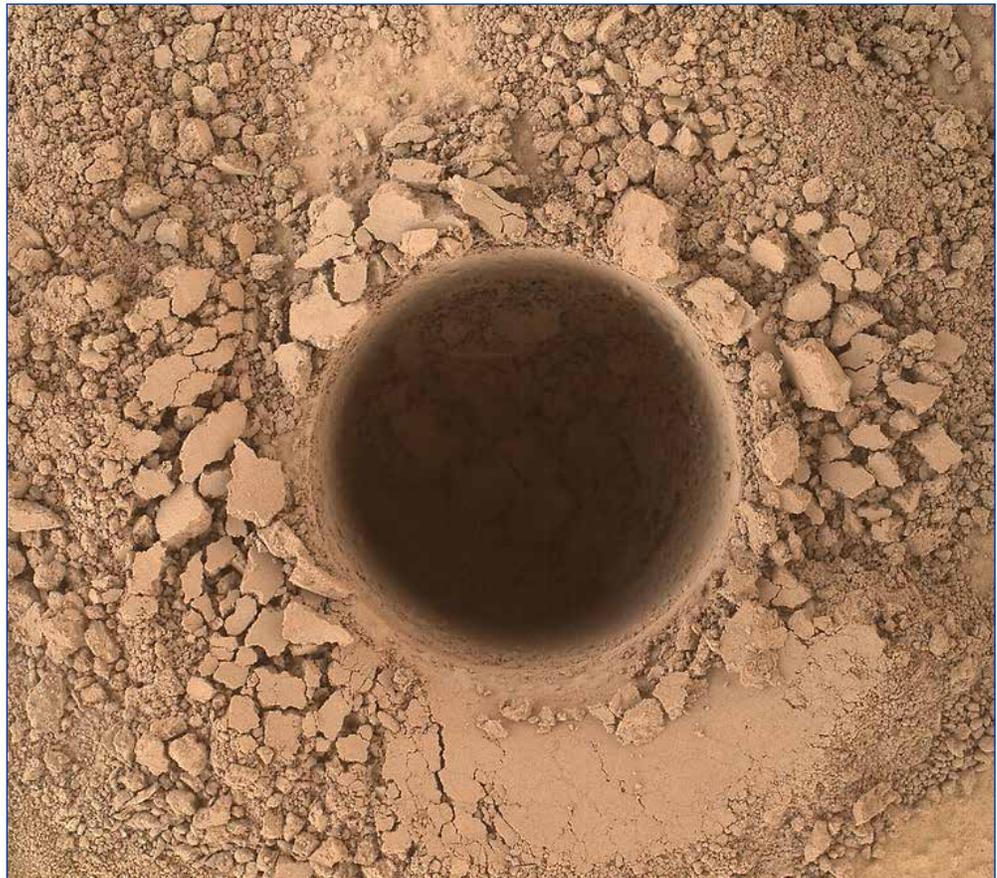
NASA's spacecraft moves closer to flight

NASA's new Orion spacecraft and the Delta IV Heavy rocket that will carry it into space are at their penultimate stops in Florida on their path to a December flight test. Orion was moved Sept. 28 out of the Payload Hazardous Servicing Facility at NASA's Kennedy Space Center in Florida, and the Delta IV Heavy rocket, built by United Launch Alliance, made its move Sept. 30 to nearby Space Launch Complex 37 at Cape Canaveral Air Force Station. It was raised Oct. 1 from the horizontal position into its vertical launch configuration. "We're 64 days away from taking the next step in deep space exploration," Kennedy Director Bob Cabana said. Following its targeted Dec. 4 launch, the Delta IV Heavy will send Orion 3,600 miles above Earth to test the spacecraft's systems most critical to crew safety. After orbiting Earth twice, Orion will reenter Earth's atmosphere to splash down in the Pacific Ocean. Orion is being built to send humans farther than ever before, including to an asteroid and Mars. For more about Orion, visit: <http://www.nasa.gov/orion>.

For NASA news releases, visit: www.nasa.gov/news/releases/latest/index.html.

Curiosity collects 1st sample from Mars mountain

This image from the Mars Hand Lens Imager (MAHLI) camera on NASA's Curiosity Mars rover shows the first sample-collection hole drilled in Mount Sharp, the layered mountain that is the science destination of the rover's extended mission. The hole is 0.63 inches in diameter and about 2.6 inches deep, at a target called "Confidence Hills" on the "Pahrump Hills" outcrop at the base of the mountain. This is a merged-focus image product combining information from multiple images that MAHLI took from a position 2 inches away from the target. The images were taken on Sept. 24, 2014. Curiosity drove more than 5 miles in about 15 months, with pauses at a few science waypoints, to reach the Mount Sharp destination. The emphasis in mission operations has now changed from drive, drive, drive to systematic layer-by-layer investigation. For more information about Curiosity, visit: <http://www.nasa.gov/msl> or <http://mars.jpl.nasa.gov/msl/>. Photo credit: NASA/JPL-Caltech/MSSS.



Congressional staffers tour Stennis facility

Staff members representing the U.S. Senate and U.S. House Appropriations committees stand in front of a RS-25 rocket engine in the Aerojet Rocketdyne engine assembly facility during a visit to Stennis Space Center on Oct. 8. Staff members included representatives of Sen. Roy Blunt, R-Mo.; Sen. Thad Cochran, R-Miss.; Rep. John Abney Culberson, R-Texas; Rep. Mario Diaz-Balart, R-Fla.; Rep. Kay Granger, R-Texas; Rep. James Moran, D-Va.; Rep. Harold Rogers, R-Ky.; and Rep. David Valadao, R-Calif.



Safety team visits Stennis

Members of the safety management team from NASA's Marshall Space Flight Center in Huntsville, Ala., stand atop the A-1 Test Stand during a visit to Stennis Space Center on Sept. 26. In addition to touring the A-1 stand, which is preparing to test RS-25 engines for NASA's new Space Launch System, team members also visited the B-2 Test Stand, seen in the left background. The B-2 stand is preparing to test the SLS core stage.

Tech transfer leaders visit Stennis center

NASA tech transfer leaders stand atop the A-2 Test Stand at Stennis Space Center during a visit to the site Sept. 25. The agency leaders spent a day touring site facilities, including the B-2 Test Stand, the Aerojet Rocketdyne engine assembly facility, the National Center for Critical Information Processing & Storage and INFINITY Science Center. The visiting team also had an opportunity to view a test of the RS-68 rocket engine on the B-1 Test Stand (seen in background).



Hancock County site selected for test facility

Note: For more than 50 years, NASA's John C. Stennis Space Center has played a pivotal role in the success of the nation's space program. This month's Lagniappe provides a glimpse into the history of the south Mississippi rocket engine test center.

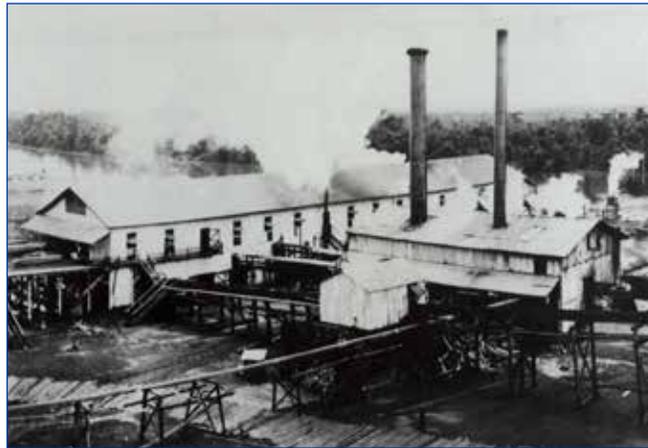
More than half a century ago this month, Hancock County residents who lived in Gainesville, Logtown, Napoleon, Santa Rosa and Westonia heard the towns would no longer be their place of domicile, but the future home of NASA's new rocket engine test facility.

The Oct. 25, 1961, announcement revealed that the Mobile, Ala., District of the U.S. Army Corps of Engineers would act as NASA's agent for land acquisition, in cooperation with the Lands Division of the U.S. Department of Justice. On that same day, a court action filed in the U.S. District Court in Jackson, Miss., and New Orleans, La., described the boundaries of the land involved.

The next day, Melvin Dovich and O.B. Moore of the Real Estate Division of the U.S. Army Corps of Engineers in Mobile arrived in Bay St. Louis, the county seat of Hancock County, to make preliminary arrangements for a local office. Their plans were under way to locate a field real estate office where appropriate staff

members could begin land acquisition operations early in 1962.

Then, at the Nov. 1, 1961, area meeting, U.S. Sen. John C. Stennis spoke on the campus of Logtown School, explaining the impact of the recent NASA announcement in Hancock County. He said the federal government was ready, able and willing to pay full compensation for the property involved. Stennis estimated the



Pictured above, the H. Weston Lumber Co. sawmill, founded in 1848, was said to be the largest in the United States at one time. The sawmill was the hub of activity and employment in the community of Logtown, one of five communities that existed where Stennis Space Center is now located.

land acquisition and easements would cost about \$13.5 million. Families living in the buffer zone would be given up to two-and-one-half years to relocate.

Lt. Col. Secrest Berry of NASA explained that the test site was selected among 30 other prospective sites, ranging from north Oregon to Florida and the Gulf Coast. The

basic criteria developed through a long study by a science team from Washington, D.C., and Marshall Space Flight Center in Huntsville, Ala., was based on available water and railroad transportations.

Berry stated the Hancock County site fell into place as the most desirable site. The area would encompass a 13,800-acre construction site in Hancock County, with a surrounding restrictive buffer zone of 125,000 acres in Hancock County. Mississippi Highway 43 and tributary highways would be relocated, as well as a short portion of U.S. Highway 90. The U.S. Corps of Engineers would open a real estate office in Bay St. Louis soon after Jan. 1, 1962, to start land acquisition.

On April 11, 1962, O.B. Moore, manager of the new real estate office, announced its first actual contacts with landowners. The first landowners to reach agreement and to sign papers for sale were Mr.

and Mrs. Conley Carver, who resided on property located in the construction area. The first check for payment of land in the fee area was issued to Mrs. Samantha B. Kellar on May 2, 1962, for her home and 12 acres of land. On May 28, 1962, the real estate office released the first check for property in the buffer zone to Mr. and Mrs. Elvie Dakes Roberson for their home and 22 acres of land.

Hail & Farewell

NASA bids farewell to the following:

Alyssa Roberts

Student Trainee

Office of the Chief Financial Officer

Nathan Laborde

AST, Electrical Experimental Equipment

Engineering & Test Directorate

Linda Sharp

Contract Specialist

Office of Procurement

And welcomes the following:

Christoffer Barnett-Woods

AST, Electrical Experimental Equipment

Engineering & Test Directorate

Office of Diversity and Equal Opportunity

Guidance offered on pregnancy discrimination

The Equal Employment Opportunity Commission recently issued the first comprehensive update of guidance on the subject of discrimination against pregnant workers since the 1983 publication of a Compliance Manual chapter. The following is the second of two articles reviewing the update. The first was published in the September 2014 issue of Lagniappe.

The Pregnancy Discrimination Act (PDA) of 1978 requires that a covered employer treat women affected by pregnancy, childbirth or related medical conditions in the same manner as other applicants or employees who are similar in their ability or inability to work. The PDA covers all aspects of employment, including firing, hiring, promotions and fringe benefits (such as leave and health insurance benefits). Pregnant workers are protected from discrimination based on:

- **Current pregnancy.** Under the PDA, an employer cannot fire, refuse to hire, demote or take any other adverse action against a woman if pregnancy, childbirth or a related medical condition was a motivating factor in the adverse employment action. This is true even if the employer believes he/she is acting in the employee's best interest.
- **Potential pregnancy.** An employer may not discriminate based on an employee's intention or potential to become pregnant. For example, an employer may not exclude a woman from a job involving processing certain chemicals out of concern that exposure would be harmful to a fetus if the employee became pregnant. Concerns about risks to a pregnant employee or her fetus will rarely, if ever, justify sex-specific job restrictions for a woman of childbearing capacity.
- **Medical condition related to pregnancy or childbirth.** An employer may not discriminate against an employee because of a medical condition related to pregnancy and must treat the employee the same as others who are similar in their ability or inability to work but are not affected by pregnancy, childbirth or related medical conditions. For example, under the PDA, since lactation is a medical condition related to pregnancy, an employer may not discriminate against an employee because of her breastfeeding schedule.

Harassment. It is unlawful to harass a woman because of pregnancy, childbirth or a related medical condition. Harassment is illegal when it is so frequent or severe that it creates a hostile or offensive environment or when it results in an adverse employment decision (such as the victim being fired or demoted).

Workers with caregiving responsibilities. Discrimination against a worker with caregiving responsibilities violates Title VII if it is based on sex and violates the

Americans with Disabilities Act (ADA) if it is based on a family member's disability. For example, an employer violates Title VII by treating a female employee with young children less favorably than a male employee with young children when deciding on work opportunities based on a belief that the mother should focus more on the children than on her career. In addition, an employer violates the ADA where it takes an adverse action, such as refusing to hire or denying promotion, against a mother of a newborn with a disability due to concerns that she would take a lot of time off for the child's care or that the child's medical condition would impose high health care costs.

Benefits of Employment. Light Duty Policies. An employer has to provide light duty, alternative assignments, disability leave or unpaid leave to pregnant workers if he/she does so for other employees who are similar in their ability or inability to work. **Leave.** While an employer may not compel an employee to take leave because she is pregnant as long as she is able to perform her job, it must allow women with physical limitations resulting from pregnancy to take leave on the same terms and conditions (e.g., provide them with the same amount of leave) as others who are similar in their ability or inability to work.

More information may be obtained at the EEOC website at: www.eeoc.gov/eeoc. Search - *pregnancy discrimination*.



Stennis observes National Hispanic Heritage Month

Stennis Space Center Director Rick Gilbrech (left) stands with Mississippi Hispanic Chamber of Commerce President Karla E. Vazquez and NASA Shared Services Center Executive Director Mark Glorioso following a National Hispanic Heritage Month observance Oct. 2. Vazquez, who also is an affiliate to the Mexican Consulate in New Orleans, spoke to Stennis employees during the program to celebrate the contributions of American Hispanics to national life. The program was sponsored by the Stennis Diversity Council and NSSC.

NASA participates in annual Hispanic conference



Stennis Space Center aerospace technologist Fernando Figueroa (right) stands with three NASA colleagues at the annual Great Minds in STEM Conference (formerly the Hispanic Engineer National Achievement Awards Conference), which was held in New Orleans on Oct. 2-4. Figueroa led in coordinating overall NASA participation in the conference, the nation's most prestigious stage for honoring excellence and building and reinforcing networks among Hispanic engineers and scientists. At this year's gathering, NASA personnel led informational and technical presentations and hosted the annual College Bowl, in which student teams compete in various challenges to test their leadership and STEM (science, technology, engineering and mathematics) skills. Joining Figueroa at a NASA exhibit during the conference are (l to r) Eddie Gonzales (Jet Propulsion Laboratory, Pasadena, Calif.), Carmen Arévalo (Armstrong Flight Research Center, Edwards, Calif.) and Alma Stephanie Tapia (Johnson Space Center, Houston).

Stennis leader speaks at MIT

Stennis Safety & Mission Assurance Director Freddie Douglas III speaks Oct. 8 during a leadership conference at the Massachusetts Institute of Technology in Cambridge, Mass. In his presentation, Douglas shared his experiences and achievements at NASA and the evolution of his career with some 300 conference participants. The conference theme was "The New Competitive Edge: Systems Thinking for Emerging, Evolving, and Established Leaders." The goal was to provide practical information from multiple disciplines that leaders at all developmental stages can apply to real-world challenges.



Stennis hosts Energy Awareness Day expo

NASA Shared Services Center employees Dodie Carter (left) and Susan Smith visit with Sumesh Arora, director of Strategic Biomass Solutions, an Innovate Mississippi program to assist early-stage renewable energy ventures along the path to market. The Strategic Biomass Solutions exhibit was one of several hosted by Stennis during a 2014 Energy Awareness Day expo Oct. 15. Information at the exhibits focused on helping Stennis employees learn about steps they can take to help conserve energy in their daily lives.