THE STATE OF ALABAMA
ENGINEERING HALL OF FAME

Founded in 1987 by proclamation of the governor, and in recognition of the sesquicentennial of formal engineering education in the state of Alabama, the Engineering Hall of Fame honors, preserves and perpetuates the outstanding accomplishments and contributions of individuals, projects and corporations/institutions that have brought and continue to bring significant recognition to the state of Alabama.

Permanent archives will be established and maintained for the collection and display of memorabilia related to the lives, accomplishments and contributions of those chosen for induction into the Engineering Hall of Fame. The office of the Board of Registration for Professional Engineers and Land Surveyors in Montgomery, Ala., provides temporary quarters for the Hall of Fame display.

The Engineering Hall of Fame is governed by a 20-member board of directors. This body establishes the criteria for selecting inductees and determines the eligibility of candidates and how these candidates shall be elected to the Engineering Hall of Fame. All candidates must meet criteria established by the board for each category. Currently, there are three such categories: individuals, corporations/institutions and projects.

Nominations for induction into the Engineering Hall of Fame are made by open call and by the members of the Engineering Hall of Fame Nominating Committee. This body is representative of most geographic areas and major engineering fields in Alabama. A selection committee, drawn from the membership of the nominating committee, designates those nominees who are to be inducted in a given year. Nominees who are not selected are held in the active file for consideration in succeeding years. This file contains biographical and other data on many outstanding individuals, corporations/institutions and projects.

The board of directors is extremely proud of those who have been inducted into the State of Alabama Engineering Hall of Fame. Individually and collectively, they have made and continue to make significant contributions to the advancement of engineering and technology, leading to an enhanced economic, cultural and political future for the state and nation. By their selection and example, they inspire others to pursue rewarding and challenging careers in all engineering fields.
PROGRAM

State of Alabama Engineering Hall of Fame
February 26, 2011

RECEPTION AND DINNER
Renaissance Hotel and Spa
Montgomery, Alabama

WELCOME AND
INTRODUCTION OF SPECIAL GUESTS
Rodney W. Summerford
Chairman, Board of Directors

INVOCATION
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Vice Chairman, Board of Directors

INDUCTION CEREMONY
Gary C. April
Rodney W. Summerford
HONOREES

INDIVIDUALS

William J. Cutts
George T. Goodwyn
H. Hoyt Harris
Lonnie G. Johnson
Olin B. King
Jack W. MacKay
Richard G. Smith

CORPORATIONS/INSTITUTIONS

Power Systems Development Facility

PROJECTS

Anniston Chemical Agent Disposal Facility
ThyssenKrupp Steel and Stainless USA
William J. Cutts, founder and CEO of American Tank & Vessel Inc., has built a premier company with a reputation for design and product expertise. Under his leadership, AT&V has become a key player in the worldwide market for steel tanks and vessels and has developed a reputation for supporting its industry and the public good by mentoring young engineers.

After receiving his bachelor’s degree in industrial management from Alabama Polytechnic Institute in 1955, Cutts joined Chicago Bridge and Iron Works’ engineering department in Birmingham, Ala. Five years later, he accepted a position with the American Blower division of American Standard and located in Knoxville, Tenn., after extensive sales training.

Cutts has been a pioneer in mechanical design, innovation and production. He participated in the construction of the first LNG tank built in the United States in 1958 in Lake Charles, La. In 1967, he sold his first large-scale-asphalt-storage tank and realized he could bring his expertise to customers worldwide.

By the 1980s, Cutts was building complex and sophisticated tank and storage systems. Since forming his present business, AT&V, in 1982, he has never looked back. He has built AT&V from a regional concern into a national and international leader in design, innovation and manufacture of steel tanks, pressure vessels and specialized structures. A significant endorsement came when the city of Mobile, Ala., worked with Cutts to site his corporate headquarters in that premier seaport. He and his colleagues later developed a fabrication facility in Lucedale, Miss., which has become a major employer in an area where employment opportunities have sometimes been scarce. An additional fabrication and erection facility was later established in Houston, Texas, to serve the petrochemical industry.

AT&V’s patented technology dealing with emission control, non-destructive examination, and construction techniques has been devoted to African, Asian, European, Central and South American, and Caribbean projects. Current overseas activities represent nearly $100 million of U.S. content in engineering, materials and fabrication. AT&V’s wide-ranging design and manufacturing efforts have brought jobs to the U.S. and Alabama for more than 25 years.

Cutts has built AT&V into an operation employing more than 250 people, primarily at the regional office in Lucedale and the headquarters in Mobile, with other personnel deployed in regional offices in Houston; Baton Rouge, La.; Moss Point, Miss.; and Birmingham. Cutts leads an innovative and imaginative company awarded, among other distinctions, the 2008 Chemical Processing’s Reader’s Choice Award for Best Technology Provider of Tanks and Vessels. AT&V has successfully competed for cutting-edge design and construction projects for sophisticated owners, including NASA.

Under the leadership of Cutts, AT&V has sponsored medical and educational missions and engineering teams traveling to Africa, has designed and constructed a school in Ghana as a sister school to Houston’s Christian High School, and is constructing a second Ghanaian school as a sister school to Indian Springs Elementary School in Mobile.

Cutts is a longtime faithful member of Government Street Presbyterian Church, in Mobile, and is personally involved in service to the poor and disadvantaged through his church.
George T. Goodwyn has never been satisfied with being merely adequate. This army officer, business owner, philanthropist and lifelong resident of Montgomery, Ala., has always upheld the highest standards in his professional and personal dealings.

Goodwyn joined the U.S. Army after receiving a bachelor's degree in civil engineering from The University of Alabama. He trained as an airborne combat engineer and served three years in Germany. He also received training in special weapons and became a first lieutenant and company commander before returning to the United States in 1963.

Goodwyn returned to Montgomery and joined Goodwyn & Williamson Bridge Construction Co. as engineer and vice president. In 1965, he formed Goodwyn Engineering Co. with only three employees. Goodwyn Engineering had grown to 17 employees by 1975. Later that year, Goodwyn and his college friend Donald Mills joined to form Goodwyn and Mills Consulting Engineers. In 1985, Steve Cawood joined as president, forming the present Goodwyn, Mills & Cawood Inc. The firm is currently one of the largest and most successful multidisciplinary design firms in the Southeast and has offices in Birmingham, Mobile, Huntsville, Auburn, Prattville, Andalusia and Vernon, Ala.; Nashville, Tenn.; Greenville, S.C.; and Fort Walton Beach, Fla. With more than 300 employees, Goodwyn, Mills & Cawood Inc. implements over $400 million in construction projects each year.

In 2002, Goodwyn created a partnership with his son, George T. Goodwyn Jr., known as Goodwyn Building Co. Inc. The company's mission is to design, build and sell new homes that will retain and gain value for the homeowners.

The legacy of Goodwyn's professional career is apparent in much of central Alabama's infrastructure. He has also influenced many practicing engineers through his mentoring and exemplary career. He has a reputation of being a good, honest and hardworking corporate citizen. According to friend and partner Steve Cawood, Goodwyn is "known for doing the right thing" and is a "tremendous partner, mentor and friend." Todd Strange, mayor of Montgomery, describes Goodwyn as being "one of the first to raise his hand in support of any initiative that would make Montgomery and the surrounding region a better place to live, work and play." He further said, "The citizens of Montgomery owe a debt of gratitude to George T. Goodwyn for his lifelong, selfless commitment to improving the quality of life of our city and its people."

In 2010, Goodwyn received the Volunteer of the Year Lifetime Achievement Award from the Volunteer and Information Center and the Junior League of Montgomery. He is the first recipient of the Lifetime Achievement Award, which honors outstanding leadership and commitment to improving the lives of residents in the River Region. Goodwyn was instrumental in creating Leadership Montgomery with the goal of bringing leaders together to improve the city. He helped create Envision 2020, a community-driven organization that takes an in-depth look at Montgomery's future. Goodwyn also assisted in spearheading Family Promise, a program for the homeless.
A labama native Henry Hoyt Harris has certainly done his state and country proud with his contributions to national defense. Harris' foresight, leadership, dedication and expertise were essential to the development and deployment of some of the nation's key air defense weapon systems. He advanced to the top civilian position in the U.S. Army Missile Command as deputy to the commanding general. In this position he was responsible for all Army missile systems development, engineering and acquisitions involving billions of dollars and multiple contractors.

A 1950 University of Alabama electrical engineering graduate, Harris spent 28 years of his career with the U.S. Army Missile Command. He was a member of the NATO Mutual Weapons Development Program. He has represented the United States in international meetings in 12 foreign countries. Harris served on the Patriot Source Selection Evaluation Board and was later appointed to the role of director of product assurance and testing for the system during the most fragile stage of its development. The Patriot Missile System has been successfully deployed for more than 30 years and is still the backbone of the nation's air defense.

Establishing the need for a man-portable air defense system, Harris orchestrated the campaign for a weapon that became known as the Stinger Weapon System. He presented plans for concept development, system development and a comprehensive test program to the Department of Defense and Congress and gained approval for the program. He became the first project manager and stayed with the program through the first four years of research, development and production. Stinger, a shoulder-fired missile, is an integral part of the country's air defense plan. It was the first missile to use hit-to-kill technology. This system was featured in the movie "Charlie Wilson's War."

Harris was also instrumental in the development of the Roland Air Defense Weapon System, an international cooperative program with France and Germany. Roland was the first major weapon system to be successfully developed under the national objective of transferring technology to the United States from Europe. Harris attained the highest rank of a career government employee, the Senior Executive Service. A recipient of the Alfred P. Sloan Fellowship in 1968, he received a Master of Science from the Massachusetts Institute of Technology. In 1981, he received the Presidential Distinguished Executive Award, the highest honor given to a career government employee, from President Ronald Reagan in a special ceremony at the White House. The Southeastern Institute of Technology recognized his achievements in 1986 with an Honorary Doctor of Science. Harris has received 22 Outstanding Performance Awards, as well as the Department of the Army Meritorious Civilian Service Award in 1971 and 1985. In 1988, he was named Distinguished Engineering Fellow by UA's College of Engineering.

After retiring from the government, Harris spent two years with the Boeing Co. as director of the High Technology Diversified Products organization. He later joined The University of Alabama at Huntsville as a senior research engineer, continuing his research in missile technology until he retired in 1999.

Harris lives in Huntsville with Marlyn, his wife of 59 years. They are the proud parents of three daughters, who are all graduates of The University of Alabama.
Lonnie G. Johnson has a lifetime of achievement and success, but he is best known for his invention and contribution to fun, the Super Soaker water gun, which has generated over $1 billion in sales since 1990. Johnson conceived of a water gun powered by air pressure while conducting an experiment at home on a heat pump using water instead of Freon.

Johnson’s inventing skills were apparent even as a boy. He learned from his father how to repair various household items, prompting him to create his own toys. During 1968, his senior year in high school, Johnson created a remote-controlled robot, Linex, which earned him first place in a science competition sponsored by The University of Alabama. He attended Tuskegee University and earned a bachelor’s degree in mechanical engineering in 1973 followed by a master’s degree in nuclear engineering in 1975, and later an honorary doctorate.

After graduation, Johnson entered the U.S. Air Force, serving as acting chief of the Space Nuclear Power Safety Section at the Air Force Weapons Laboratory, where he analyzed the NASA space system that employed nuclear power sources. In 1979, he left the Air Force to accept a position at the NASA Jet Propulsion Laboratory in Pasadena, Calif., as a member of the system-design team for the Galileo mission to Jupiter and its 16 moons. Johnson was responsible for the nuclear-power-system design and invented memory-keep-alive subassembly for the Galileo spacecraft. He returned to the Air Force in 1982 and was assigned to Strategic Air Command in Omaha, Neb., followed by a stint on the Stealth Bomber Program at Edwards Air Force Base in California. Over the course of his Air Force career, Johnson received numerous honors, including two Commendation Medals and the Air Force Achievement Medal.

In 1987, Johnson returned to the Jet Propulsion Laboratory, where he worked on the Mars Observer Project and the Cassini mission to Saturn. During his career at the Jet Propulsion Laboratory, he received multiple achievement awards from NASA for his work in spacecraft system design. Meanwhile, after receiving the patent for his water-gun invention, he spent much of the 1980s seeking a company to manufacture and market his toy. In 1989, he and Larami Corp. partnered, and, later that year, the Super Soaker was unveiled to the public.

Johnson is currently president and founder of Johnson Research and Development Company Inc., a technology development company and its spinoff companies, Excellatron Solid State LLC and Johnson Electro Mechanical Systems LLC. The companies are developing revolutionary energy technology.

In 2008, Johnson received the Breakthrough Award from Popular Mechanics for his invention of the Johnson ThermoElectrochemical Converter System. Articles on his inventions have appeared in Time magazine, the New York Times, Inventor’s Digest and Popular Mechanics. He is listed in the Black Inventors Online Museum and is a member of the 100 Black Men of Atlanta, an organization that mentors young people through high school and college. Johnson currently holds more than 100 patents with over 20 more pending and is the author of several publications on spacecraft power systems.
Olin B. King is the founder and former chairman of SCI Systems Inc., of Huntsville, Ala. A 1953 graduate of North Georgia College and State University, King started a business, which later became known as SCI, with two friends in the basement of his home in 1961. The company, which originated with the goal of designing and building satellites, quickly became a major subcontractor for NASA’s Saturn Apollo Lunar Landing Program and several missile and launch vehicle systems.

During the Vietnam War, SCI made subsystems for military aircraft, which were later applied to commercial aircraft. SCI began making computer terminals for IBM in 1976 and personal computers for IBM and other large companies in 1981. King and his company designed and built electronics for the Voyager spacecraft, which remains an operative pioneer in outer space today. Launched in 1977, Voyager is the farthest man-made object from Earth and still provides continuous research data.

At one time, SCI was Huntsville’s largest private employer and one of the state’s largest employers. It grew under King to operate 51 facilities in 19 countries with 31,500 employees worldwide. The company became a Fortune 300 enterprise with hundreds of customers in the computer, telecommunications, medical and defense industries.

Prior to King’s retirement from SCI, the company was listed on the New York Stock Exchange and had annual revenues of more than $8 billion. Since his retirement, he has remained active in the development of industrial facilities in the Huntsville area.

Before forming SCI, King served his country during the Korean War as an officer in the U.S. Army Signal Corps. He began his professional career as an engineer with RCA and later joined the Army’s ballistic missile program. He arrived in Huntsville in 1957 and began building satellites and missiles in association with Wernher von Braun.

In addition to founding SCI, King has been active in other business ventures, including directorships at Regions Financial Corp., Interfinancial, Abbott Medical Electronics Co., Baker Automation Systems and Deltacom. King has also participated in many civic activities, including the Research Park Board of the city of Huntsville, the Huntsville Museum of Art and the Huntsville Symphony. He was a founding director of the Huntsville Hospital Foundation.

In 1984, he was named Executive of the Year by the National Management Association. Until his retirement, he served as a trustee of The University of Alabama System and board member of the UAB Health System. King was elected to the Alabama Academy of Honor in 1988. In 1998, he was selected as Alabama’s Chief Executive Officer of the Year by the Birmingham News and was inducted into the Alabama Business Hall of Fame in 2000. He has received honorary doctorates from the university systems of Alabama, Georgia and South Dakota.

King is an inventor, holder of several patents and author of numerous business and engineering articles.

King is married to the former Shelbie Abbott, and they are the parents of two sons and two daughters and grandparents of six.
Celebrating his 101st birthday last month, Jack W. MacKay continues the lifelong enthusiasm and dedication to the profession that drives him to remain a practicing engineer. From his inventions to his leadership to his instruction, he is definitely a pioneer of cast iron and steel pipe, and the field would not be where it is today without his efforts.

A native of Asheville, N.C., MacKay earned two bachelor's degrees from The University of Alabama’s College of Engineering: aerospace engineering in 1935 and civil engineering in 1936. In 1936, he accepted a position with American Cast Iron Pipe Co. in Birmingham, Ala., where he had a rewarding career of 39 years. At the outset of World War II, he was a first lieutenant in the U.S. Army Engineer Reserves, but he was released from active duty as being essential to industry. He designed two 30-inch diameter cupolas and two 42-inch diameter cupolas for the production of artillery shell molds and grenades. He spent the war years producing steel castings for tractors, airplanes and ships for American companies.

After the war, MacKay played a leading role in the development and expansion of ACIPCO’s steel-casting facilities, the acquisition of the steel-pipe plant, and the company’s entry into the ductile-iron-pipe field. He sold the first orders of ductile iron water and gas pipe and led the way in customer acceptance of this new product, which now constitutes the major product line of the company. He invented, patented and named the American Fastite joint, which became the company standard joint for pipe and fittings in the water and wastewater industries. When he retired in 1975, he was vice president of sales, secretary and a member of the board of directors and the board of management. ACIPCO honored him at his retirement for his “untiring efforts to promote the company”; his “unique qualities in sales and engineering in developing and patenting the Fastite joint, which proved to be so successful to the company”;

and his “constant efforts to bring the company into broader product lines, such as ductile iron pipe, steel pipe, valves and hydrants.”

MacKay is a published author on steel, cast iron and ductile pipe. In 1956, he received the American Water Works Association National Distribution Award. He served as president and board member of the Alloy Casting Institute and as chairman of the Cast Iron Pipe Research Association’s public relations and advertising committees. MacKay has taught vocational courses in the Birmingham, Bessemer and Tuscaloosa areas of Alabama. He was proclaimed a UA Distinguished Engineering Fellow in 1988.

After retiring from ACIPCO, MacKay served as vice president of NTW Tire Co. until 1982. He has worked as an engineering consultant for Caldwell-MacKay, his son’s company, since 1981. MacKay remains a licensed professional engineer in the state of Alabama. Jack and his wife of 72 years, Gweneth, live in Birmingham. They have three children.
As the third director of NASA's John F. Kennedy Space Center, Richard G. Smith oversaw the first launch in the space shuttle program. His administration spanned the completion of the space shuttle buildup, the launch of 25 shuttle missions and the beginning of the planning effort for the International Space Station.

After receiving a bachelor's degree in electrical engineering from Auburn University in 1951, Smith became a member of the rocket research and development team at Redstone Arsenal. In 1960, he joined NASA when the Development Operations Division of the Army Ballistic Missile Agency became the nucleus for the establishment of the George C. Marshall Space Flight Center.

Smith served in positions of increasing responsibility at Marshall Space Flight Center. He played various roles in the former Guidance and Control Laboratory and in the Systems Engineering Office prior to being appointed deputy manager and later manager of the Saturn program. In 1974, Smith became director of science and engineering and was named deputy director of Marshall Space Flight Center later that year.

In 1978, Smith accepted an assignment as deputy associate administrator for Space Transportation Systems at NASA Headquarters in Washington, D.C. He served as director of the Skylab task force appointed by the NASA administrator to represent NASA both preceding and following the re-entry of Skylab.

Smith was named the third director of the John F. Kennedy Space Center in 1979. The center has been the launch site for every U.S. human space flight since 1968. In 1981, under Smith's leadership, the world watched as Columbia launched for a two-day journey around the Earth. The successful mission ended when the shuttle landed at Edwards Air Force Base. The mission was a monumental achievement for NASA and Smith's dedicated team.

In 1984, following the completion of the STS-41-B mission, Challenger landed at the shuttle landing facility at Kennedy Space Center for the first time. The landing facility was developed under Smith's leadership, and the Challenger landing represented another major success for Smith. Today, the Kennedy facility is the preferred end-of-mission landing site, with Edwards Air Force Base standing by as the alternate site.

Smith was a member of the NASA Executive Development Education Panel, and he also served as a member of the Auburn Alumni Engineering Council.

Smith received the NASA Medal for Exceptional Service in 1969 and the NASA Medal for Distinguished Service in 1973 for his contributions to the Apollo lunar landing program and the Skylab program. In 1980, he received NASA's Outstanding Leadership Medal for his management of the Skylab re-entry program and was awarded the rank of meritorious executive in the Senior Executive Service. He was awarded an honorary doctorate in science by the Florida Institute of Technology in 1981. He was also awarded an honorary doctorate in science by his alma mater, Auburn University, in 1983.

Smith is married to the former Louise Self. They have three children and two grandchildren.
The Power Systems Development Facility leads the United States' efforts to develop coal-based-power-plant technologies that are cleaner, less expensive and more environmentally acceptable. Established in 1995, the facility is a unique research and development center designed to test, evaluate and accelerate the deployment of advanced coal-based power system components and technologies.

As an engineering-scale-demonstration facility, the PSDF studies advanced coal-fired power systems and high-temperature, high-pressure gas-filtration systems. The facility is designed at a size large enough that system components can be evaluated and assessed in an integrated fashion to provide data for commercial scale-up. When compared with the costs of building stand-alone facilities for each of the technologies used at the PSDF, construction at this single site has saved more than $32 million. The PSDF is funded by the U.S. Department of Energy, Southern Co., the Electric Power Research Institute, and other companies and organizations across the energy sector. It is managed and operated by Southern Co.

The facility, located in Wilsonville, Ala., employs 124 full-time Southern Co. and Alabama Power personnel. There are 172 other positions filled by construction labor brokers and other subcontractor employees.

The PSDF developed the Transport Gasifier, which was selected for commercial deployment through the Department of Energy's Clean Coal Power Initiative in record time. PSDF and DOE's private-public-collaboration efforts introduced the Transport Integrated Gasification, or TRIG, process to the commercial marketplace. The first U.S. commercial application of TRIG, in Kemper County, Miss., will lead the way to lower-carbon electricity production. The 582-megawatt Mississippi Power plant is expected to begin operation by 2014. In China, the Dongguan TMEP Facility will add TRIG to an existing gas-turbine-combined-cycle plant so that it can use clean, synthetic gas from coal as its fuel for generating electricity, rather than fuel oil. The plant will prove that TRIG offers an effective solution to China's energy needs.

The facility has also developed coal-feed systems and continuous ash-removal systems. In addition, PSDF has improved the performance and availability of hot-gas filtration and syngas cooling.

In order to meet growing demand for electricity, coal will continue to supply a large portion of the nation's electricity needs. Future coal systems must become increasingly clean and more efficient for the United States to fully realize the potential of its most abundant fossil fuel. The PSDF gives U.S. industry the world's most cost-effective, flexible test center for evaluating the critical components of tomorrow's coal-based-power-generating systems.
The Anniston Chemical Agent Disposal Facility impressively meets and exceeds its challenge of safely destroying the chemical weapons stockpile at the Anniston Army Depot. While working with deadly substances and weapons, the disposal facility has successfully eliminated 99 percent of the risk to the public from the depot’s stockpile of 4.5 million pounds.

Storage of chemical weapons at the Anniston Army Depot, one of eight continental Army sites, began in 1963. Prior to the beginning of disposal operations in 2003, the depot stored 7.1 percent by agent weight of the total U.S. chemical weapons stockpile, which consisted of more than 2,200 tons of nerve and blister agents in more than 661,000 chemical weapons. As of November 2010, the Anniston Chemical Agent Disposal Facility has safely destroyed more than 90 percent of the sensitive, lethal compounds and munitions, some of which are more than 50 years old.

Employing more than 900, the Anniston Chemical Agent Disposal Facility’s yearly operating budget is over $160 million. The facility encompasses 50 acres, and its structures have 83,000 square feet of work space with more than 15,000 plant activities and processes. The facility has contributed to the enhancement of chemical-agent monitoring, personnel protection and destruction of chemical weapons.

Implemented, improved and proven at Anniston Chemical Agent Disposal Facility, the Linear Projectile Mortar Disassembly machine utilizes an electroserver-driven-pick-and-place robot to move munitions to individual stations in a more efficient manner, as opposed to using traditional hydraulic systems. The LPMD will benefit other demilitarization sites through the use of improved technology and the documentation of countless lessons learned.

The Anniston Chemical Agent Disposal Facility was a key player in developing and implementing the Static Detonation Chamber, which will allow the U.S. and other countries to safely destroy chemical and conventional munitions without impact to the environment. The SDC reduces the safety risk of processing over-packed or leaking munitions.

The U.S. signed a treaty — The Convention on the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction (Chemical Weapons Convention) — in 1993. Currently 188 countries, including the U.S., have ratified the treaty, agreeing to chemically disarm their countries by destroying any stockpiles of chemical weapons they may hold and any facilities that produced them, as well as any chemical weapons they abandoned on the territory of other countries. The treaty requires destruction of the entire U.S. chemical weapons stockpile by April 2012.

After a stringent, nine-year permitting process, construction of the Anniston Chemical Agent Disposal Facility began in 1997 and was completed in 2001. Destruction of the Alabama stockpile began in 2003. By 2008, the facility completed destruction of all nerve agents, more than 2.5 million pounds stored at the Anniston Army Depot, with an impeccable safety record and high record for the environment. The final task, which is destroying the mustard stockpile, began in July 2009. In less than two years, there will be no chemical stockpile in Alabama.
A world-class, carbon-steel-processing facility and engineering marvel in Calvert, Ala., ThyssenKrupp Steel and Stainless USA will provide high-quality products for customers in the automotive, construction, pipe and tube, service and appliance industries. While protecting the environment and displaying a high regard for safety, the $4.6 billion project has created infinite opportunities for Alabama.

The enormous complex covers 5.6 square miles with seven million square feet under roof. The facility includes a state-of-the-art river terminal, a rail terminal, a hot strip mill, a cold-rolling mill, a wastewater treatment system and four hot dip-coating lines. By the time the plant is fully operational, it will process 5.3 million metric tons of carbon steel annually, which includes 4.4 million tons of carbon steel and one million tons of stainless. The facility's cooperative production of steel creates a unique, innovative, cross-segment partnership that enables cost sharing in areas such as infrastructure, logistics and some processing.

The project is believed to be one of the largest private-industrial investments in the U.S. and is a rare case of job in-sourcing for the country. The complex will create an estimated 2,700 permanent jobs in Alabama when it becomes fully operational. Over 5,200 workers were on-site during the various phases of construction, providing great opportunities for many area businesses. ThyssenKrupp has invested nearly $750 million with Alabama companies, approximately $192 million with Mobile-area companies and another $1 billion with other Southeastern-based companies.

ThyssenKrupp strongly believes in protecting the environment. Throughout three years of construction, the company has been attentive to the environment by assisting in protecting wetlands, using recyclable materials and providing the highest level of energy efficiency. In addition, extra fencing was installed to protect the threatened Alabama black bear.

In 2009, the project's safety-incident rate was less than half of the national average for a heavy-construction site. In many instances, ThyssenKrupp has instituted practices that exceeded Occupational Safety and Health Administration guidelines. Earlier this year, the company entered into a strategic partnership with OSHA designed to encourage, assist and recognize efforts to eliminate serious hazards and achieve model workplace safety and health practices.

ThyssenKrupp is one of the world's largest integrated materials and technology companies. The group of companies is headquartered in Düsseldorf, Germany, with operations in 80 countries and over 190,000 employees. It is one of the top 10 companies in Germany, with $61 billion in annual revenue. The company has steel, stainless, elevator and technology subsidiaries.

In the U.S., there are 70 companies in more than 400 locations, with about 25,000 employees and more than $9.5 billion in annual sales. Through its predecessor companies, ThyssenKrupp has been part of the U.S. historical landscape for 170 years, dating back to 1837 when Alfred Krupp, founder of predecessor company Krupp, provided coin-minting-machine prototypes to the U.S.
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State of Alabama Engineering Hall of Fame

INDIVIDUALS

1989  Kenneth Rule Daniel*
      John Murdoch Harbert III*
      Horace King*
      Mark Lovel Nichols*
      Sabert Oglesby Jr.
      Joseph Mason Rodgers*
      William Luther Sibert*
      James Robert Thompson Jr.
      Robert Jemison Van de Graaff*
      Wernher von Braun*

1990  John Morin Gallalee*
      Ben Screws Gilmer
      William Ray Lucas
      Harry Edwards Myers Sr.*
      Daniel Pratt*

1991  William Russell Brownlee
      Henry C. Goodrich
      Paul B. Krebs*
      William Franklin Land
      Charles Allen Long Jr.
      James Tucker MacKenzie*
      Eberhard F.M. Rees*

1992  T. Louis Austin*
      William F. Edmonds*
      Miller Reese Hutchison*
      Philip W. Lett
      John K. McKinley
      Joseph C. Moquin

1993  Otis William Bynum Sr.*
      Thomas Hamilton Chilton*
      Edwin Milton Hardin
      Thomas J. Lee
      Erskine Ramsay*
      Walter K. Wilson Jr.*

1994  Daniel B. Barge Jr.*
      Ernest C. Gaston*
      Sam Ginn
      Theodore C. Kennedy
      John W. Mincy
      James Tracy O'Rourke Jr.
      Jabez Curry Street*
      Earle C. Williams

1995  Gerald B. Andrews
      James A. Blackwell Jr.
      Robin Lee Browne Buckelew
      Joseph Brandly Converse*
      John Thomas Hartley
      Albert J. Smith Jr.
      Mark C. Smith*

1996  Eugene C. Gwaltney Jr.*
      Elmer B. Harris
      Milton H. Ward
      Charles E. Williams

1997  Garry Neil Drummond Sr.
      M. Miller Gorrie
      F. Brooks Moore
      Paul Taylor

1998  Robert F. Barfield
      William F. Hayes
      James S. Marlen
      Michael B. McCartney
      James B. Odom
      Charles M. Rampacek

1999  Allen Franklin
      David R. Hart*
      Harry H. Holliman
      Joe T. McMillan

*Deceased
MEMBERS

State of Alabama Engineering Hall of Fame

INDIVIDUALS

2000  Bernard N. Ames*
      W. Donald Bell
      John V. Davis*
      Ronald M. Dykes
      Sam H. Wainwright

2001  L. Owen Brown
      N. Jan Davis
      Robert E. Hails
      W. George Hairston III
      William W. Moss
      Stephen F. Thornton
      Francis Erskine White*

2002  Joe W. Forehand
      Tom D. Kilgore
      T. Keith King
      William H. Lawler
      Ed L. Reynolds
      James S. Voss

2003  Dennis L. Baxendale
      John W. Brown
      Bryghte Davis Godbold
      Leroy McAbee Sr.
      Charles D. McCrary
      Leonard L. Mitchum
      John Thomas Walter

2004  Chester C. Carroll
      T. Michael Goodrich
      Oliver D. Kingsley Jr.
      Forrest S. McCartney
      Douglas L. McCrary

2005  Ralph S. Cunningham
      George D. Hopson
      Joe Leonard
      Thomas Kenneth Mattingly II
      Thomas L. Patterson
      Neil G. Thompson

2006  Charles D. Griffin
      Coul tas D. Pears
      William B. Reed
      Charles H. Sain
      David W. Scobey Jr.
      Dwight L. Wiggins

2007  Marcus J. Bendickson
      Julian Davidson
      James M. Delahay*
      Thomas E. Doster III
      Earl R. Foust
      Raymond E. Loyd
      M.A. “John” Oztekin

2008  James C. Bamberger
      Melissa B. Herkt
      Walter F. Johnsey*
      Robert S. Ryan
      George E. Uthlaut
      John H. Watson
      Walter S. Wolotz

2009  Timothy D. Cook
      Kevin M. Hostler
      Lavon F. Jordan
      Leslie F. Kenne
      James W. Kennedy
      Anthony J. Topazi
      H. Kenneth White

2010  Richard W. Amos
      Linda A. Figg
      Ronald W. Gray
      Philip E. LaMoreaux Sr.
      Robert M. Lightfoot Jr.
      George A. Little
      William R. McNair
      Susan N. Story

*Deceased
## MEMBERS
State of Alabama Engineering Hall of Fame

## PROJECTS

<table>
<thead>
<tr>
<th>Year</th>
<th>Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>1989</td>
<td>Bankhead Tunnel</td>
</tr>
<tr>
<td></td>
<td>Lunar Roving Vehicle</td>
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<td></td>
<td>Alabama Power's Refrigeration/</td>
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<td></td>
<td>Thermal Storage System</td>
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<td></td>
<td>Tennessee-Tombigbee Waterway</td>
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<td>Wilson Dam</td>
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<td>1990</td>
<td>Interstate 10 Mobile Bay</td>
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<td>Twin Bridges</td>
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<td>U.S. Steel's Fairfield Works</td>
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<td></td>
<td>Seamless Pipe Mill</td>
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<td>1991</td>
<td>ACIPCO's Iron Melting Facility</td>
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<td></td>
<td>SRI's High Temperature/Materials Evaluation Facility</td>
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<tr>
<td>1992</td>
<td>Lower Mobile Bay/Mary Ann Field Project</td>
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<tr>
<td>1993</td>
<td>Joseph M. Farley Nuclear Plant</td>
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<td></td>
<td>Saturn V Launch Vehicle</td>
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<td>1994</td>
<td>McDuffie Coal Terminal</td>
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<td>Muscle Shoals Canal</td>
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<tr>
<td>1995</td>
<td>Alabama River Group</td>
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<td>Companies Complex</td>
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<td>Vulcan Statue</td>
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<td>1996</td>
<td>Birmingham Industrial Water Supply System</td>
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<td>CSS H.L. Hunley</td>
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<tr>
<td>1997</td>
<td>J.B. Converse Lake and S. Palmer</td>
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<td></td>
<td>Gaillard Pumping Station</td>
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<td>Tannehill Furnaces</td>
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<td>1998</td>
<td>MSFC X-Ray Calibration Facility</td>
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<td>1999</td>
<td>Acordis Cellulosic Fibers Inc.</td>
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<td>Tencel Process</td>
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<td>BellSouth's Alabama Operations Center</td>
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<td></td>
<td>Ellicott Southern Boundary</td>
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<td>2000</td>
<td>Cochrane/Africatown USA Bridge</td>
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<td></td>
<td>Robert Trent Jones Golf Trail</td>
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<tr>
<td>2001</td>
<td>Hubble Space Telescope</td>
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<td>2002</td>
<td>ACIPCO's 65-Megawatt</td>
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<td>Contiarc Furnace</td>
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<td></td>
<td>Mercedes-Benz M-Class Plant</td>
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<td>2003</td>
<td>I-65 Emergency Bridge Replacement</td>
</tr>
<tr>
<td></td>
<td>NCAT Pavement Test Track</td>
</tr>
<tr>
<td>2009</td>
<td>Shelby Centers located within institutions of higher education in Alabama</td>
</tr>
</tbody>
</table>
MEMBERS

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CORPORATIONS/INSTITUTIONS

1989  George C. Marshall Space Flight Center
       RUST International Corporation

1990  BE&K Inc.
       Blount Inc.
       Southern Company Services Inc.

1991  BCM Engineers Inc.
       Intergraph Corporation

1992  SCI Systems Inc.

1993  U.S. Army Missile Command

1994  Nichols Research Corporation

1997  Hardie-Tynes Manufacturing Company

2000  Sloss Furnaces National Historic Landmark

2001  ADTRAN

2002  Jones, Blair, Waldrup, and Tucker Inc.

2003  American Cast Iron Pipe Company
       Volkert & Associates Inc.

2004  COLSA Corporation
       Vulcan Materials Company

2005  Barge Waggoner Sumner & Cannon Inc.
       Southern Research Institute

2006  LBYD Inc.

2007  Brasfield & Gorrie
       Drummond Company Inc.
       G.W. Jones & Sons Consulting Engineers Inc.
       Walter Schoel Engineering Company Inc.

2008  Southern Earth Sciences Inc.

2010  TTL Inc.
2011 INDUCTION CEREMONIES

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CONTRIBUTORS

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Lavon Jordon
Ted Kennedy
Thomas J. "Jack" Lee
George Little
William R. McNair
Leonard Mitchum
F. Brooks Moore
James B. Odom
J. Tracy O'Rourke
Ed L. Reynolds
Robert Ryan
Charles H. Sain

The University of South Alabama, College of Engineering
Tuskegee University

George Uthlaut
John Watson
H. Kenneth White & Associates
Earle Williams
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Auburn University Alumni Engineering Council
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Kent Corporation
Oliver Kingsley
William Land
Leroy McAbee
McCartney Construction Company Inc.
Tom and Carol Patterson
Southern Nuclear
Southern Research Institute
The University of Alabama at Birmingham School of Engineering
The University of Alabama Capstone Engineering Society
The University of Alabama in Huntsville School of Engineering
TTL Inc.
Valmont
Volkert & Associates Inc.
John Thomas Walter
Tuskegee University
2011 Host Institution

Artist sketches are by Ralph Mark, Birmingham, Alabama.

Power Systems Development Facility, Anniston Chemical Agent Disposal Facility, and ThyssenKrupp Steel and Stainless USA pictures are provided by Power Systems Development Facility, Anniston Chemical Agent Disposal Facility, and ThyssenKrupp Steel and Stainless USA.