

Microsystems and Engineering Sciences Applications (MESA) Project

An essential component of national security, the Sandia National Laboratories (SNL) Microsystems and Engineering Sciences Applications (MESA) complex encompasses buildings and facilities to design, develop, fabricate, assimilate, and meet microsystems criteria for national security needs. Conceptual design of MESA began in 1999, construction was approved in 2003, and the entire project was completed in September 2008. When Critical Decision (CD) 2 was approved in October 2002, the total estimated cost was \$518.5M, and the estimated completion date was May 2011. The final actual cost of \$468.459M and completion date of September 2008 demonstrates SNL's ability to bring large line-item projects in early and under budget, especially when adequately funded in the early stages.

This vital project combined silicon processing, packaging and integration, and fabrication of compound-semiconductor devices under one roof. Microsystems extend the information processing of silicon integrated circuits to add functions such as sensing, actuation, and communication—all within a single package. The combination of functionalities provided by the MESA complex allows projects to progress from concept to production all in one environment by integrating the numerous scientific, engineering, and computational disciplines necessary to



Clockwise, top to bottom, MicroFab exhaust system, project team, Central Utility Building, new cleanroom, service road and pipe bridge.



The Pete V. Domenici Security Innovation Center houses SNL staff who work on weapon subsystem engineering and modeling and other activities.



MESA MicroLab researchers are involved in three types of laboratory operations—chemical, electrical, and laser.

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FACILITIES MANAGEMENT AND OPERATIONS CENTER

produce functional, tough, integrated microsystems for research, development, and prototyping activities. It houses the past, present, and future of supercomputers, microsystems technology, and security, representing the SNL tradition of quality.

The suite of facilities comprising MESA includes approximately 400,000 square feet of clean room facilities, laboratories, and offices. MESA has been called upon to develop key components for chemical detection systems, both large and small, atomic clocks, communications systems, and research for several current and future security applications in weapons, energy resources, defense, and homeland security. It is recognized as a world-class, cutting-edge facility for research and development by the scientific community.



#189A Auto Wedge Bonder - F&K Delvotec 6400



HC Ion Implanter.



#189F Wire Pull - DAGE Series 4000PAXY



#189A Auto Wedge Bonder - F&K Delvotec 6400

The Microelectronics Development Laboratory (MDL) Retooling project included both radiation-hardened and critical microsystems tools. MDL retooling and installation of new equipment in the MicroFab was a major part of the MESA Project.



The MESA mall in Tech Area I, also known as the Innovation Corridor.

For more information about the MESA project, please call or send an email message to one of the following project representatives:

Project Manager

William L. Jenkins, Jr.
Telephone: (505) 844-2346
Email: wljenki@sandia.gov

Deputy Project Manager

Edward R. Sanchez
Telephone: (505) 844-4860
Email: ersanch@sandia.gov

Deputy Project Manager

David A. Bailey
Telephone: (505) 844-1115
Email: dabaile@sandia.gov

Business Manager/ Project Controller

Ernie Limon
Telephone: (505) 844-9457
Email: evlimon@sandia.gov

Deputy Project Manager

James B. Beals
Telephone: (505) 844-8546
Email: jbbeals@sandia.gov

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