

## Featured Project

### NASA-Ames Research Center Arc Jet Facilities

Moffett Field, California

For the Arc Jet Facilities of the Thermophysics Branch at NASA's Ames Research Center, Moffett Field, California. ArcSine first developed a master plan in 1995, and has been providing continuous support and upgrades in line with that plan. This facility was integral to support of NASA's space shuttle fleet, as well as an essential test facility for the next generation Crew Exploration Vehicle, the shuttle's replacement. While some facilities at Moffett Field are being mothballed, this facility continues to enjoy a full operations and research schedule, ongoing improvements, and is now the world's standout facility of its type.

A representative project was the 60-megawatt dc power supply rectifier module replacement and control system integration. The project consisted of conceptual design, final design, programming, and start up and testing for the control system. A related project, added six dc rectifier modules rated 6,000V, 4,000 amps each.

Other examples of ArcSine's services:

- For the TP3 test apparatus, design, construction, programming, startup, and documentation for PLC-based SCADA system. Included hardwired safety system, 20mW power supply control, gas control, and interfaces with high-speed data acquisition and other systems.
- Preparation of maintenance plans, including surveys, evaluations, and analysis of 20- and 60-megawatt dc power supplies.
- Design, construction management, and startup of 20-megawatt dc power supply rehabilitation and control system for the Direct Connect Arc Jet Facility.
- Programming and testing of multiple programmable logic controllers, SCADA systems, high-speed embedded servo controllers, and data acquisition systems.
- Failure investigations and reports for the Interaction Heating Facility.
- Development of facility Standard Operating Procedures (SOP's).
- Panel Test and Interactive Heating Facilities: Designed, purchased, and installed wiring infrastructure, isolation amplifiers, and data acquisition equipment for monitoring 300 differential analog test chamber parameters of supersonic plasma under high vacuum and high electromagnetic interference (EMI) conditions.
- 60 Megawatt dc Power Supply: Designed, furnished, programmed, and installed a PC-based data acquisition system which monitors operating parameters of six 20 megawatt dc power supply rectifier modules. Fiber optic communications were used to maintain 30kV isolation between modules.

Electrical  
Mechanical  
Programming  
Construction Services

