

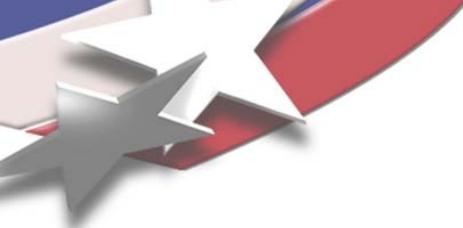
Sandia National Labs

A Quickie Overview of the Facilities Management & Operations Center

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Chair, Lighting Team
Webmaster, Tour Guide, Bureaucrat, & more!

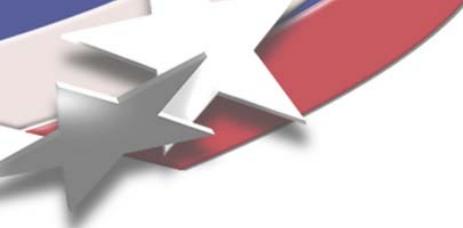
Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company,
for the United States Department of Energy's National Nuclear Security Administration
under contract DE-AC04-94AL85000.



Sandia - FMOC

Sandia's History

- **Started as Los Alamos' X Division in 1940s**
 - **Now a stand-alone NNSA Lab**
 - But also do work for DOD, HSD, OST, etc.
 - **Makes the non-nuclear portions of nuclear weapons**
 - But nukes now less than half the budget
 - **Several remote sites:**
 - New Mexico site's "south 40"
 - Tonopah Test Range, NV
 - Kauai Missile Range, HI
 - Sandia-Livermore, CA
 - Small sites in CO, NV, DC, AK, Russia, others



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Sandia's Current Biggies

- **Microelectronics Systems Area (MESA)**
 - \$200 megabuck expansion of custom wafer fab & lab
 - Leader in MEMS and Rad-hard devices
- **The Z-Machine**
 - Biggest X-ray generator on the planet (except a nuke)
 - Racing NIF towards fusion
- **Nuclear Weapon Stockpile Stewardship**
 - Red Storm Computer world's fastest, for a while
 - ACRR and SPR: Reactors you can watch at work
- **Adding Homeland Security projects and buildings**
 - Selling ourselves to other than just nuclear weapons



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Demographics

- **6.5 million square feet in the combined sites**
- **12,000 people on the combined sites**
 - **9000 Sandians, the rest are contractor “associates”**
 - **653 in the FMOC (~5%)**
 - **Engineers & architects, craftsmen, planners, business staff, custodians, management & admin, etc**
- **Budget is ~\$1 gigabuck for the Labs**
 - **About \$65 megabucks for the FMOC (~7%)**
 - **Plus FIRP and other episodic DOE income**
 - **Pays for utilities, regular maintenance, and restorations**



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Construction Organization

- **Director and 5 Senior Managers responsible for:**
 - 1. Plans & overhead support**
 - 2. MESA (major nanomachine & wafer fab project)**
 - 3. Projects (all the other construction)**
 - Includes inspectors and
 - 4. Sites Management (Building Management Teams)**
 - 5. Maintenance (everything else)**
 - CM, PM, PdM, RCM, Warehouse, Lighting, etc
 - Engineering & Architectural Standards Program
 - <http://www.sandia.gov/engstds>
 - **The CAS Program**
- **Procurement, ES&H, Tech Security, Telecomm offices are matrixed in but not part of FMOC**

http://www.sandia.gov/engstds



Facilities Engineering & Architectural Standards

[Home](#) | [Notices](#) | [Specifications](#) | [Drawings](#) | [Manuals](#) | [Forms](#) | [Training](#)



The objectives of the Sandia Facilities Management and Operations Center's (FMOC) Engineering Standards Program are to:

- Issue and update Standard Documents that contribute to the FMOC's goals.
- Maintain cost-effective compliance with applicable DOE Orders; international, national, and local Codes; and associated regulations.
- Provide Standard Documents that clearly define the desired level of quality and performance required for FMOC engineering design, construction, and operations.
- Reduce first-time (construction) costs by moving toward commercial and industry standards while not increasing life cycle costs.
- Improve access to FMOC Standard Documents and related information.

These overviews describe the FMOC Engineering & Architectural Standards web page contents:

- Update Notices [overview](#)
- Construction Specifications [overview](#)
- Standard Drawings [overview](#)
- Design Manuals
 - Facilities Design Standards Manual [overview](#)
 - Telecommunications Design Manual [overview](#)
 - Sandia Campus Design Guidelines
 - Standard for Interior and Exterior Signs
 - CADD Standards Manual [overview](#)
- Forms and Templates [overview](#)
- Training [overview](#)

Contact the **SpecMaster** with questions about the contents of this site, the applicability of these Standards, or about the function of these web pages.



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Project Management

- **Line Items and GPPs**
 - Projects over ~\$500k
 - Change the building's design basis, or build new
- **Customer Funded**
 - Between \$50k and \$500k
 - May change the design basis some, maybe not
 - Directly support the science
 - Or FIRP, RIK, and other major renovations
- **Facilities Express**
 - Less than \$50k, no design changes



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Building Management Teams are key

- Building Manager, 3-4 Engineers, Architect, Crafts
 - Matrixed from System SMEs
- Must know “everything” about their buildings
 - Negotiate with scientists on building capabilities
 - Prioritize corrective maintenance; schedule PMs
 - Develop cost estimates, scopes of work, outyear needs
- Design review of A/E design packages
 - Work for the Project Manager ad-hoc on each project
 - Insure compliance with Specs & Standards
 - Answer RFIs and approve submittals, if not by A/E
 - Try to deconflict the disciplines during construction
 - Oversee commissioning and occupancy



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Concerns

- **As-built drawings and records never get caught up.**
- **Too many decisions kept in brains and not in records**
- **Too few people and \$\$ for this size of campus**
- **Emphasis on cost & schedule at the expense of performance**
- **Strained relationship with ES&H and Security requirements**
- **Gold-plated requirements; allowances for (im)probable future**

Congratulations

- **Lighting Program has saved two megawatts so far**
- **GPP construction program going well**
- **Recycling & Environmental processes are well accepted**
- **I'm still alive and getting paid to do this**