# PERKIS ENGINEERING, INC.

## Statement of Qualifications

*MEP Engineering, Power Systems & Facility Design*

Roman Perkis, PE | President & Principal Electrical Engineer
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### Firm Overview

Perkis Engineering, Inc. is a California MEP engineering firm providing design, analysis, and construction-phase services for semiconductor, life sciences, research, institutional, and commercial facilities throughout the San Francisco Bay Area and beyond. Since 2016, the firm has delivered permit and construction documents, power system studies, and facility assessments for owners, architects, contractors, and engineering firms.

The firm is led by Roman Perkis, PE, who personally performs or directs every project and serves as Electrical Engineer of Record. Clients work directly with the licensed engineer from the first site walk through construction support, which keeps communication direct, turnaround fast, and fees competitive. When a project calls for additional disciplines, Perkis Engineering coordinates with mechanical, structural, and architectural consultants to deliver a complete, permit-ready package.

### Principal

**Roman Perkis, PE – President & Principal Electrical Engineer**

Roman has over 20 years of hands-on experience on ground-up and expansion facility projects, including power distribution, emergency and standby power, lighting, fire protection, and low voltage systems. He has led infrastructure work ranging from unit substations and generator installations to data center power upgrades and cleanroom build-outs, and has performed short-circuit, coordination, and arc flash studies on low and medium voltage systems. His technical expertise includes power distribution design, National Electrical Code and California Electrical Code compliance, arc flash and coordination studies, medium voltage relay protection, lightning protection, PV array design, LEED standards, and Title 24.

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| Education | Bachelor of Science, Electrical Engineering – Case Western Reserve University, 2006 |
| Registration | Professional Engineer (Electrical) – California No. E19560; Oregon No. 9971PE; Idaho No. 5161570 |
| Role | Project manager, designer, and Electrical Engineer of Record on all Perkis Engineering projects |

## Services

| Service | Description |
|---|---|
| Power Distribution Design | Electrical services, switchgear, unit substations, transformers, busduct, distribution and branch panels, feeders, and equipment connections for new and existing facilities |
| Emergency & Critical Power | Generator sizing and design, automatic transfer switches, UPS systems and UPS distribution, battery systems, and backup power assessments |
| Power System Studies | Short-circuit, protective device coordination, and arc flash studies modeled in SKM PowerTools, with reports and field label content; peer review of third-party studies |
| Utility Service & Coordination | New and upgraded services, PG&E applications and Greenbook compliance, and coordination with utilities and building departments |
| Mechanical & Process Equipment Power | Power and controls raceway for chillers, cooling towers, pumps, air handlers, fire pumps, and semiconductor process tools |
| Lighting & Title 24 | Interior and site lighting, lighting controls, and signed Title 24 compliance documentation |
| Assessments & As-Builts | Existing-conditions surveys, load studies, single-line as-builts, feasibility studies, and Basis of Design reports |
| Construction Support | Submittal review, RFI responses, plan check responses, and design QA/QC |

## Markets & Representative Clients

| Market | Representative Clients |
|---|---|
| Semiconductor & Advanced Manufacturing | Lam Research, Applied Materials, Western Digital, Navitas Semiconductor, EMD Electronics, W.L. Gore & Associates, Toray Advanced Composites, Keysight Technologies |
| Life Sciences & Biopharma | Genentech, Ultragenyx, Lonza Biologics, Exact Sciences, NeoTract |
| Government & Research | NASA Ames Research Center (Moffett Field), SLAC National Accelerator Laboratory |
| Education, Institutional & Community | The Priory School, Oshman Family JCC, First Presbyterian Church |
| Commercial & Retail | Citibank branches, automotive dealership EV charging, restaurants, retail and office tenant improvements, warehouses |

## Featured Projects

**RGL Cleanroom Expansion, Phases 2 & 3**

*Lam Research – Fremont, CA*

Lead electrical engineer for a multi-phase cleanroom expansion at a semiconductor R&D facility. Phase 3 included central utility plant expansion with new chillers, cooling towers, and pumps; new fan-deck air handling equipment; new unit substations with 480 V and 208 V busduct routed to the subfab; and a new generator to back up scrubber exhaust fans. Deliverables included 30% and 60% design, a long-lead equipment package with specifications, and permit and construction documents.

**Building 92 Chilled Water System Upgrade**

*Applied Materials – Santa Clara, CA*

Electrical design for replacement of an end-of-life chilled water plant including multiple chillers, cooling towers, and chilled water pumps. Scope included load analysis to establish points of connection for utilities, specification of new electrical panels, switchgear, and transformers, a short-circuit, coordination, and arc flash study for all new equipment, and lighting, receptacle, and grounding design for the new chilled water yard.

**Cryomodule Repair & Maintenance Facility**

*SLAC National Accelerator Laboratory – Menlo Park, CA*

Electrical design for a new building housing the Cryomodule Repair & Maintenance Facility. Scope included design and sizing of a new electrical service, power distribution to all panels and equipment, lighting and lighting controls, grounding, fire protection, and pathways for network, Wi-Fi, phones, access control, and cameras, delivered from Basis of Design through permit and construction documents.

**RGL Velocity Lab Expansion**

*Lam Research – Fremont, CA*

Electrical design for an approximately 8,000 SQF laboratory expansion including a cleanroom, pump chase, and gown area. Scope included a new UPS with associated transformers and UPS distribution panels, new normal power panels, replacement LED lighting rated for the new spaces, and pathways for security, life safety, and gas monitoring systems.

**Cleanroom Expansion**

*Navitas Semiconductor – Torrance, CA*

Electrical design for new office, cleanroom, back-of-house support, laboratory, and laboratory support areas. Scope included power distribution design, new panelboards, feeders to all laboratory and support equipment, and Title 24 compliant lighting and lighting controls.

**Critical Facilities Projects**

*NASA Ames Research Center – Moffett Field, CA*

Multiple projects at the NASA Moffett campus, including replacement of a 750 kVA medium voltage oil-filled indoor transformer (vendor selection, physical fit, feeder modifications, and replication of monitoring and alarms), power to a replacement air-cooled chiller and pumps at Building M580, a rooftop air handler replacement at Building N219, and a UPS installation at Building N230.

**Nitrogen Generation Plant – 12 kV Substation & Utility Yard**

*Western Digital – Great Oaks Parkway Campus, San Jose, CA*

Electrical design to power a new nitrogen (N2) generation plant from a nearby 12 kV source. Design included a new 12 kV substation with step-down transformers serving two 480 V switchboards that feed the N2 plant, outdoor lighting and receptacles for the new utility yard, and Title 24 compliance documentation, all to Western Digital master specifications. When the plant moved to an alternate location, Perkis Engineering redesigned the installation for the new site, coordinated with Western Digital, the utility, and the plant vendor's separately permitted package, and supported the project through construction and commissioning.

**Cooling Tower & Chiller System Retrofit**

*Lam Research – Livermore, CA*

Electrical design for replacement of cooling towers, chillers and related pumps at Building CA32, including power for a temporary chiller to support the building during construction, assessment of existing feeders for reuse, and power to new UCS RIO monitoring panels.

**Campus Switchgear Replacements**

*The Priory School – Portola Valley, CA*

Electrical design for replacement of service switchgear serving the aquatics center, quad area, and science and library buildings. Scope included permit drawings compliant with PG&E Greenbook requirements, utility service applications, coordination with PG&E and the city, and construction-phase RFI and submittal support.

## Additional Project Experience

***Emergency Power, UPS & Generators***

- **Ultragenyx, South San Francisco** – Generator installation at 7000 Shoreline Court with a follow-on short-circuit, coordination, and arc flash study in SKM, including field label content
- **Ultragenyx Freezer Farm, Novato** – Electrical design for a freezer farm served by a dedicated generator and UPS-backed distribution
- **NeoTract, Pleasanton** – Emergency power assessment evaluating generator size, fuel type, and connection scheme across critical-load, load-shed, and whole-building scenarios, followed by generator design
- **Lonza Biologics, Hayward** – Assessment of service reliability and generator and UPS capacity to support a new QC microbiology laboratory
- **Hearts & Minds Activity Center, San Jose** – Standby generator sized from metering data, with a stand-alone ATS feeding an emergency distribution panel

***Semiconductor, Laboratory & Industrial***

- **Semiconductor tool installations** – Power design for process and metrology tool installs for Western Digital, Lam Research, and EMD Electronics, including CMP, PVD, SEM, XPS, AFM, and TXRF tools
- **Applied Materials Building 85, Santa Clara** – Diesel fire pump replacement, including field investigation of grounding and alarm interfaces, one-line from point of connection, and breaker interrupting-rating verification

- **Toray Advanced Composites, Morgan Hill** – Building 1 mix room expansion with new ovens, mixer, and HVAC, and Building 3 laboratory relocation including a Title 24 lighting and controls upgrade of the 90,000 SF building
- **W.L. Gore & Associates, Santa Clara** – Cleanroom gray room relocation and expansion, from Basis of Design through construction administration
- **Lam Research, Fremont** – Mechanical yard controls upgrade with PAC/RIO panel power and VFD replacements, CDA expansion, and fluoride wastewater tank system

***Power System Studies & Technical Review***

- Short-circuit, coordination, and arc flash studies with single-line as-builts for several industrial properties, and protective device coordination studies for existing facilities
- Technical peer review of arc flash studies prepared by other firms, and design QA/QC for tool installation packages

***Utility Services & Commercial***

- **22519 Foothill Blvd, Hayward** – Restoration of electrical service to a vandalized 18,000 SF former retail building with a new outdoor multi-meter switchboard and PG&E service application, followed by tenant improvements
- **Electrical service upgrades** – Numerous PG&E service upgrades for commercial, industrial, and mixed-use properties
- **EV charging** – Charging infrastructure for automotive dealerships and corporate campuses, including feasibility studies

## Prior Experience of Principal

Before and alongside founding Perkis Engineering, Roman served as lead electrical engineer on projects including:

- **Intel, Santa Clara** – Data center power distribution upgrade from remote panels to a Starline busduct system in a space-constrained, live environment; 12 kV service short-circuit, coordination, and arc flash study with relay and breaker settings for selective coordination; data room design for semiconductor tool servers; and multiple Class 1 cleanroom projects
- **HP Samaritan Data Center, Corvallis, OR** – Design and specification of electrical distribution equipment for a new data center
- **Genentech, South San Francisco** – New security building with switchgear, generator, and UPS for critical systems
- **Genentech, Oceanside** – Owner's representative leading the electrical technical working group for an 83,732 SF, $270 million biologics manufacturing facility, including medium and low voltage distribution and a site-wide generator test
- **Owens Corning, Santa Clara** – Engineer of record for a double-ended 12 kV–480 V substation
- **UC Santa Cruz Delaware Avenue Building C** – Pre-design study for conversion of a 182,000 SF former chip fabrication building with 45,000 SF of Class 100 cleanrooms into a laboratory warm shell
- **Lockheed Martin Space, Sunnyvale** – Autoclave system relocation and badging office design
- **Alameda County Hall of Justice, Hayward** – Site survey, SKM model, and arc flash study with mitigation recommendations

- **Utility and industrial** – Distribution substation modifications including high voltage breakers, transformers, relay schemes, and capacitor banks; MCC design for heavy industrial facilities

## Tools, Standards & Deliverables

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| Software | AutoCAD (drawings), SKM PowerTools (power system studies), Bluebeam Revu (review and markup) |
| Codes & Standards | California Electrical Code / NEC, California Building Standards Code, Title 24 Part 6, PG&E Greenbook, and owner facility standards |
| Deliverables | PE-stamped permit and construction drawings, specifications, calculations, study reports, and editable AutoCAD DWG files |
| Insurance | Professional liability, general liability, auto, and workers' compensation. Certificate of insurance available on request |

## Contact

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