

Pico Power Project

***Appendix 10-A
Civil Engineering Design Criteria***

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APPENDIX 10A
CIVIL ENGINEERING DESIGN CRITERIA

10 A1 INTRODUCTION

This appendix summarizes the codes, standards, criteria, and practices that will be generally used in the design and construction of civil engineering systems for the Silicon Valley Power Pico Power Project. Information that is more specific will be developed during execution of the project to support detailed design, engineering, material procurement specifications, and construction specifications as required by the California Energy Commission.

10 A2 CODES AND STANDARDS

The design of PPP civil engineering systems will be in accordance with laws and regulations of the federal government, the State of California, the County of Santa Clara, the City of Santa Clara, and industry standards. The current issue or edition of the documents at the time of filing of this Application for Certification (AFC) will apply, unless otherwise noted. In cases where conflicts between the cited documents exist, requirements of the more conservative document will be used.

10 A2.1 Civil Engineering Codes and Standards

The following codes and standards have been identified as applicable, in whole or in part, to civil engineering design and construction of power plants:

- American Association of State Highway and Transportation Officials (AASHTO) - Standards and Specifications
- American Concrete Institute (ACI) - Standards and Recommended Practices
- American Institute of Steel Construction (AISC) - Standards and Specifications
- American National Standards Institute (ANSI) - Standards
- American Society of Testing and Materials (ASTM) - Standards, Specifications and Recommended Practices
- American Water Works association (AWWA) - Standards and Specifications
- American Welding Society (AWS) - Codes and Standards
- Asphalt Institute (AI) - Asphalt Handbook
- California Energy Commission - Recommended Seismic Design Criteria for Non-Nuclear Generating Facilities in California, 1989
- Concrete Reinforcing Steel Institute (CRSI) - Standards
- Factory Mutual (FM) - Standards
- National Fire Protection Association (NFPA) - Standards
- International Conference of Building Officials (ICBO) - Uniform Building Code (UBC), 1997
- Steel Structures Painting Council (SSPC) - Standards and Specifications

10 A2.2 Engineering Geology Codes, Standards and Certifications

Engineering geology activities will conform to the applicable federal, state, and local laws, regulations, ordinances, and industry codes and standards.

10 A2.2.1 Federal

None are applicable.

10 A2.2.2 State

The Warren-Alquist Act, PRC, Section 25000 et seq. and the California Energy Commission (CEC) Code of Regulations (CCR), Siting Regulations, Title 20 CCR, Chapter 2, require that an Application for Certification (AFC) address geologic and seismic aspects.

The California Environmental Quality Act (CEQA), PRC 21000 et seq. and the CEQA Guidelines require those potentially significant effects, including geologic hazards, be identified and a determination made as to whether they can be substantially reduced.

10 A2.2.3 City (This is should be reworked to reflect that the CEC will have the CBO which will do these activities.)

California State Planning Law, Government Code Section 65302, requires each city and county to adopt a general plan, consisting of nine mandatory elements, to guide its physical development. Section 65302(f) requires that a seismic safety element be included in the general plan.

PPP development activities will require certification by a Professional Geotechnical Engineer and a Professional Engineering Geologist during and following construction, in accordance with the Uniform Building Code UBC), Chapter 70. The Professional Geotechnical Engineer and the Professional Engineering Geologist will certify the placement of earthen fills and the adequacy of the site for structural improvements, as follows:

- Both the Professional Geotechnical Engineer and the Professional Engineer will address UBC Chapter 70, Sections 7006 (Grading Plans), 7009 (Cuts), 7012 (Terraces), 7013 (Erosion Control), and 7015 (Final Report).
- The Professional Geotechnical Engineer will also address UBC Chapter 70, Sections 7011 (Cuts) and 7012 (Terraces).

Additionally, the Professional Engineering Geologist will present findings and conclusions pursuant to PRC, Section 25523 (a) and (c); and 20 CCR, Section 1752 (b) and (c).