

# Acronyms and Abbreviations

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°C	degrees Celsius
°F	degrees Fahrenheit
µg/m <sup>3</sup>	micrograms per cubic meter
A	amperes
AAC	aluminum conductor aluminum core
AADT	annual average daily traffic
AAQS	ambient air quality standards
AASHTO	American Association of State Highway Transportation Officials
AB	Assembly Bill
ABAG	Association of Bay Area Governments
AC	alternating current
AC Transit	Alameda-Contra Costa County Transit District
ACCC	aluminum compact conductor, composite core
ACHP	Advisory Council on Historic Preservation
ACI	American Concrete Institute
ADM	Alternate Design Method
ADT	average daily traffic
afy	acre-feet per year
AHPA	Archaeological and Historic Preservation Act
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AMCA	Air Moving and Conditioning Association
ANSI	American National Standards Institute
API	American Petroleum Institute
APLIC	Avian Power Line Interaction Committee
AQIA	air quality impact assessment
AQMD	air quality management district

ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ATC	Authority to Construct
AWG	American Wire Gauge
AWS	American Welding Society
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
BART	Bay Area Rapid Transit
BCDC	Bay Conservation and Development Commission
BMP	best management practice
BNSF	Burlington Northern Santa Fe
BP	before present
BPIP	Building Profile Input Program
BTU	British thermal unit
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalARP	California Accidental Release Prevention Program
Cal-OSHA	California Occupational Safety and Health Administration
CAM	Compliance Assurance Monitoring
CARB	California Air Resources Board
CBC	California Building Code
CCCEHD	Contra Costa County Environmental Health Division
CCR	Code of California Regulations
CCTA	Contra Costa County Transportation Authority
CDC	California Department of Conservation
CDFG	California Department of Fish and Game
CDOGGR	California Division of Oil, Gas, and Geothermal Resources
CEC	California Energy Commission
CEDD	California Employment Development Department

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CEMS	continuous emission monitoring system
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations, Title 29, Chapter XVII, Part 1910
CGS	California Geological Survey
CHP	combined heat and power
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
CHRPPR	Chevron Refinery Power Plant Replacement
CNDDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
Cogen 3000	proposed nominal 47-MW cogeneration train
COPC	constituent of potential concern
CPI	Chemical and Petroleum Industry
CPM	compliance project manager
CPT	control power transformer
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRS	Cultural Resources Specialist
CSC	California Species of Special Concern
CSLC	California State Lands Commission
CTG	combustion turbine generator
CTI	Cooling Tower Institute
CUP	Conditional Use Permit

CUPA	Certified Unified Program Agency
CWA	Clean Water Act
DAS	data acquisition system
dB	decibels
dBA	A-weighted decibels
DC	direct current
DCS	distributed control system
DEM	Digital Elevation Model
DNL	Day-Night Noise Level
DOC	Determination of Compliance
DOF	California Department of Finance
DOT	U.S. Department of Transportation
DSCF	dry standard cubic feet
DTSC	Department of Toxic Substance Control
DWR	California Department of Water Resources
EAC	Early Action Compact
EAF	equivalent availability factor
EBMUD	East Bay Municipal Utility District
EBRPD	East Bay Regional Park District
EERC	Energy & Environmental Research Corporation
EIR	Environmental Impact Report
EJ	Environmental Justice
EMF	electric and magnetic field
ERC	Emission Reduction Credit
ESA	ESA Environmental Associates, Inc.
FAA	Federal Aviation Administration
fc	foot-candle
FCC	Fluid Catalytic Cracker
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act

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FHWA	Federal Highway Administration
FM	fire marshal
FMMP	Farmland Mapping and Monitoring Program
g	unit of acceleration equal to the value of the acceleration caused by Earth's gravity at sea level
g/s	grams per second
GE	General Electric
GEP	Good Engineering Practice
GHG	greenhouse gas
GHz	gigahertz
GJ	gigajoule
GJ/hr	gigajoule per hour
GO	General Order
gpm	gallons per minute
GSU	generator step-up
GUS	global user station
H <sub>2</sub>	hydrogen
H <sub>2</sub> -STG	proposed nominal 17-MW hydrogen plant steam turbine generator
HAP	hazardous air pollutant
HARP	Hotspots Analysis Reporting Program
HAZOP	hazards and operability study
HCP	habitat conservation plan
HHRA	human health risk assessment
HHV	higher heating value
HI	hazard index
HI	Heavy Industry
HI	Hydraulic Institute Standards
HIA	acute hazard index
HIC	chronic hazard index
HMBP	Hazardous Materials Business Plan

HMI	human-machine interface
HP	high pressure
hp	horsepower
HPC	high-pressure compressor
HPT	high-pressure turbine
HRA	Health Risk Assessment
HRSA	Health Risk Screening Analysis
HRSG	heat recovery steam generator
HTW	high-temperature water
Hz	hertz
I/O	input/output
I-580	Interstate 580
ICEA	Insulated Cable Engineers Association
IEEE	Institute of Electrician and Electronic Engineers
IES	Illuminating Engineering Society
IP	intermediate pressure
IR	infrared
ISCST3	Industrial Source Complex Short-Term
ISO	International Standards Organization
KGRA	known geothermal resource area
KOP	Key Observation Point
kpph	thousand pounds per hour
kV	kilovolt
kV/m	kilovolts per meter
kVA	kilovolt-ampere
lb/day	pounds per day
lb/hr	pounds per hour
lb/MW-hr	pounds per megawatt-hour
lb/yr	pounds per year
L <sub>dn</sub>	day-night noise level

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LEL	lower explosion limit
$L_{eq}$	equivalent noise level
LHV	lower heating valve
$L_{max}$	maximum A-weighted sound level
$L_n$	percentile noise level
LORS	laws, ordinances, regulations, and standards
LP	low pressure
LPG	liquid petroleum gas
LPT	low-pressure turbine
LSA	LSA Associates, Inc.
mA	milliampere
MACL	maximum allowable contaminant limit
MACT	maximum achievable control technology
MCC	motor control center
MCP	motor circuit protector
MEIR	maximum exposed individual resident
MEIW	maximally-exposed individual worker
mG	milligauss
mg/L	milligrams per liter
mg/m <sup>3</sup>	milligrams per cubic meter
mgd	million gallons per day
MHz	megahertz
MMBtu	million British thermal units
MMBtu/hr	million British thermal units per hour
mph	miles per hour
MSS	Manufacturers Standardization Society Practices
Mw	moment magnitude
MW	megawatt
NAAQS	national ambient air quality standards
NAD27	North American Datum 1927

NAHC	Native American Heritage Commission
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NEPA	National Environmental Policy Act
NESC	National Electric Safety Code
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NFPA	National Fire Protection Association
ng/J	nanograms per Joule
NO	nitric oxide
NO <sub>2</sub>	nitrogen dioxide
NO <sub>x</sub>	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NPOC	non-precursor organic compounds
NPT	National Pipe Thread
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSPS	New Source Performance Standards
NSR	New Source Review
O <sub>3</sub>	ozone
OEHHA	Office of Environmental Health Hazard Assessment
OSD	NRCS Official Series Descriptions
OSHA	Occupational Safety and Health Administration
Pb	lead
PCC	point of common coupling
PCE	Passenger Car Equivalent
PCS	plant control system
PG&E	Pacific Gas and Electric Company
PLC	programmable logic controller
plf	pounds per linear foot

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PM <sub>10</sub>	particulate matter with aerodynamic diameter less than or equal to 10 microns
PM <sub>2.5</sub>	particulate matter with aerodynamic diameter less than or equal to 2.5 microns
PMI	point of maximum impact
POC	precursor organic compounds
ppbv	parts per billion by volume
ppm	parts per million
ppmvd	parts per billion by volume dry
ppmw	parts per million by weight
PPRP	Chevron Richmond Refinery Power Plant Replacement Project
ppt	parts per trillion
Project	Chevron Refinery Power Plant Replacement Project Small Power Plant Exemption
PSD	Prevention of Significant Deterioration
psf	pounds per square foot
psia	pounds per square inch absolute
psig	pounds per square inch gauge
PTO	Permit to Operate
RARE	Richmond Advanced Recycling Expansion
RCNM	Roadway Construction Noise Model
RCRA	Resource Conservation and Recovery Act
REL	Reference Exposure Level
RFG	refinery fuel gas
RI-TVI	radio interference and television interference
RMP	Risk Management Plan
RO	reverse osmosis
ROG	reactive organic gases
ROW	right-of-way
RP	Richmond Pacific
RPA	Registered Professional Archaeologist

rpm	revolutions per minute
RRWEW	Richmond Refinery Water Enhancement Wetland
RTD	resistance temperature detector
RWQCB	San Francisco Bay Regional Water Quality Control Board
SAIC	Science Applications International Corporation
SARA	Superfund Amendment and Reauthorization Act
SCR	selective catalytic reduction
SER	significant emission rate
SHPO	State Historic Preservation Officer
SIGT	steam-injected gas turbine
SLC	State Lands Commission
SO <sub>2</sub>	sulfur dioxide
SOP	standard operating procedure
SOSS	Standard Oil Switching Station
SPCC	spill prevention control and countermeasures
SPPE	Small Power Plant Exemption
SSPC	Steel Structures Painting Council
State	State of California
STG	steam turbine generator
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TBACT	Best Available Control Technology for Toxics
TDS	total dissolved solids
TIBL	thermal internal boundary layer
TMDL	total maximum daily load
TPH	total petroleum hydrocarbon(s)
TPS	Total Plant Solution
tpy	tons per year
TQ	Threshold Quantity

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TSO	Traffic Service Objective
UL	Underwriter Laboratories Inc.
UP	Union Pacific
UPC	Uniform Plumbing Code
UPS	uninterruptible power supply
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
USNPS	U.S. National Park Service
UTM	Universal Transverse Mercator
UTM	Universal Transverse Mercator Projection
V	volt
V/C	volume-to-capacity
Vac	volts alternating current
Vdc	volts direct current
VMS	variable message sign
VOC	volatile organic compound
vph	vehicles per hour
WDR	waste discharge requirements
West County	West Contra Costa County
WGNCEP	USGS Working Group on Northern California Earthquake Potential