Revised
Application for Certification
for
HYDROGEN ENERGY CALIFORNIA
Kern County, California

Prepared for:
Hydrogen Energy International LLC

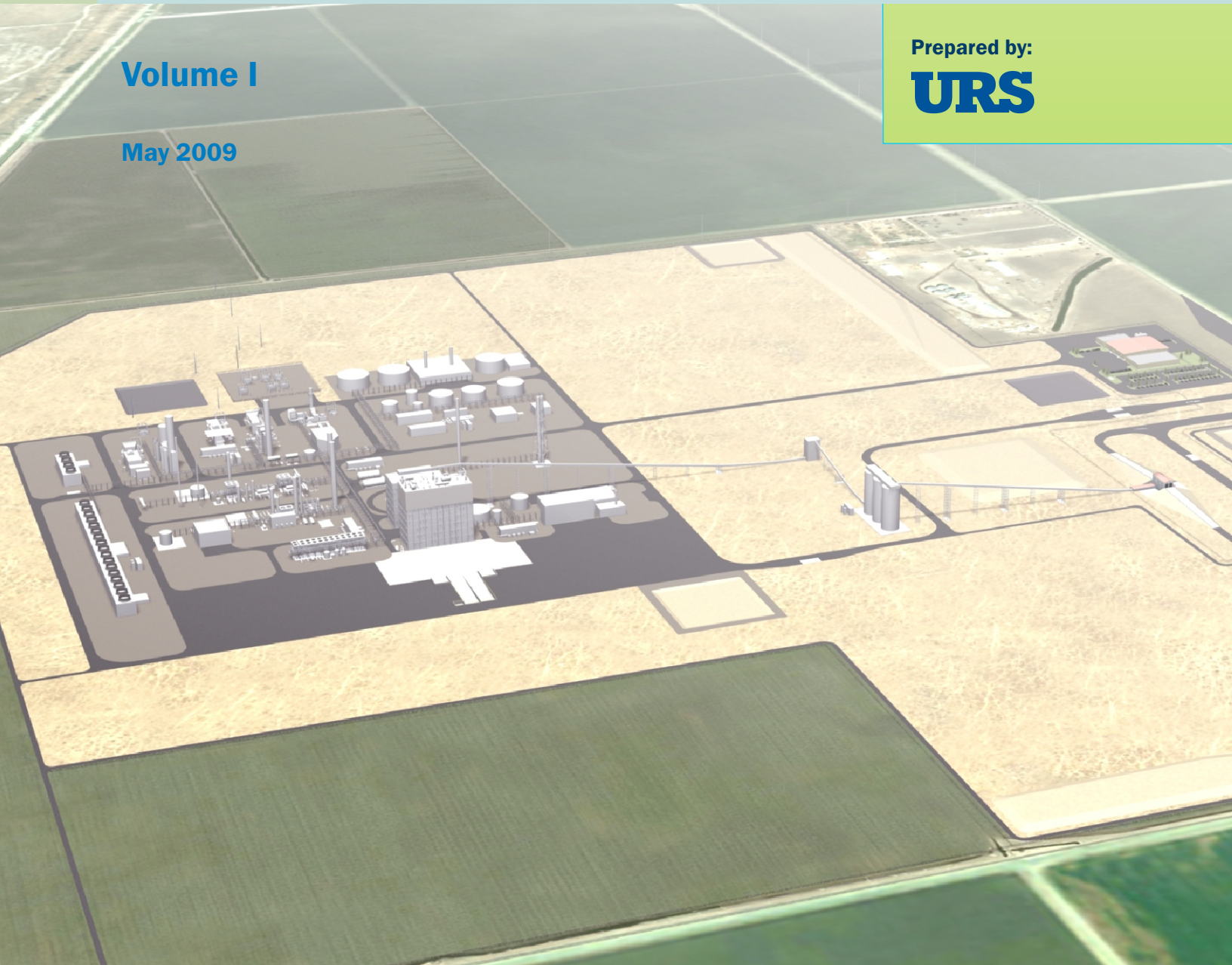
hydrogen energy

Submitted to:
California Energy Commission

Prepared by:
URS

Volume I

May 2009



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LIST OF ACRONYMS AND ABBREVIATIONS

3D	three-dimensional
°F	degrees Fahrenheit
°K	degrees Kelvin
AAQS	ambient air quality standards
AB	Assembly Bill
AC	alternating current
ACHP	Advisory Council on Historic Preservation
ACSS/TW	aluminum conductor steel supported conductor with trapezoidal stranding
ADRP	archaeological data recovery plan
ADT	average daily trips
af	acre-feet
AFC	Application for Certification
AFFF	aqueous film-forming foam
afy	acre-feet per year
AGR	Acid Gas Removal
AHMs	Acutely Hazardous Materials
Al_2O_3	Aluminum Oxide
ALUC	Airport Land Use Commission
ALUCP	Airport Land Use Compatibility Plan
ANC	acid neutralizing capacity
ANSI	American National Standards Institute
APCO	Air Pollution Control Officer
APE	area of potential effect
APN	Assessor's parcel number
AQMP	Air Quality Management Plan
AQRVs	Air-Quality–Related Values
Ar	argon
AST	aboveground storage tank
ASTM	American Society for Testing and Materials
ASU	air separation unit
ATC	Authority to Construct
ATP	archaeological testing plan
BAC	Booster Air Compressor
BACT	Best Available Control Technology
BaO	barium oxide
bbo	billion barrels of oil
BFW	boiler feed water
BGRP	Brackish Groundwater Project
bgs	below ground surface
BLM	Bureau of Land Management
BMP	best management practices
BNSF	Burlington Northern Santa Fe
BOP	balance of plant
BPIP-Prime	Building Profile Input Program — Prime
BRMIMP	Biological Resource Mitigation Implementation and Monitoring Plan
BVWSD	Buena Vista Water Storage District

LIST OF ACRONYMS AND ABBREVIATIONS

C_1	methane
C_2	ethane
C_3	propane
C_6+	hexanes plus higher carbon compounds
CAA	Clean Air Act
CAAA	Clean Air Act Amendments of 1990
CAAQS	California Ambient Air Quality Standards
CAD	Computer Aided Drafting
CAISO	California Independent System Operator
CalARP	California Accidental Release Prevention
Caltrans	California Department of Transportation
CaO	calcium oxide
CARB	California Air Resources Board
CATEF	California Air Toxics Emission Factor
CB	Construction Battalion
CCAR	California Climate Action Registry
CCR	California Code of Regulations
CCS	carbon capture and sequestration
CCS	cryptocrystalline
CCW	closed-cooling water system
CDFG	California Department of Fish and Game
CDM	California Department of Conservation, Division of Mines and Geology
CDOC	California Department of Conservation
CDOF	California Department of Finance
CEC	California Energy Commission
CEMS	Continuous Emissions Monitoring System
CEQA	California Environmental Quality Act of 1970
CERCLA	Comprehensive Environmental Response, Compensation, Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CH_4	methane
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
CHSC	California Health and Safety Code
CNDDB	California Native Diversity Data Base
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
COD	Commercial Operating date
COG	Council of Governments
COS	carbonyl sulfide
CPT	cone penetration test
CPUC	California Public Utility Commission
Cr_2O_3	Chromium (III) Oxide
CRM	Cultural Resource Monitor
CSVP	combustion source visible plume

LIST OF ACRONYMS AND ABBREVIATIONS

CTG	combustion turbine generator
CUPA	Certified Unified Program Agency
CVWQCB	Central Valley Water Quality Control Board
CWA	Clean Water Act
DAT	Deposition Analysis Threshold
DC	direct current
DCS	Distributed Control System
DEM	Digital Elevation Model
DMV	Department of Motor Vehicles
DOE	Department of Energy
DOGGR	California Division of Oil, Gas, and Geothermal Resources
DOC	Determination of Compliance
DOT	U.S. Department of Transportation
DTSC	Department of Toxic Substances Control
DVD	digital versatile disk
DWR	California Department of Water Resources
EDTA	ethylene diamine tetra-acetic acid
EHSD	Environmental Health Services Department
EOR	enhanced oil recovery
EPC	Engineering Procurement Construction
EPS	Emission Performance Standard
ERC	emissions reduction credits
ESA	Endangered Species Act
ESA	Environmental Site Assessment
ESIL	Existing Scenic Integrity Levels
FAA	Federal Aviation Administration
Fe_2O_3	Iron (III) Oxide
FEMA	Federal Emergency Management Agency
FeS	Iron (II) Sulfide
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
FMCSA	Federal Motor Carrier Safety Administration
FMMP	Farmland Mapping and Monitoring Program
ft/s	feet per second
GE	General Electric
GEP	Good Engineering Practice
GHG	greenhouse gas
GIS	Geographic Information System
gpm	gallons per minute
GPS	global positioning system
H_2	hydrogen
H_2S	hydrogen sulfide
HAP	hazardous air pollutant
HARP	Hotspots Analysis and Reporting Program
HCl	hydrochloric acid
HDD	horizontal directional drilling

HDPE	high-density polyethylene
He	helium
HECA	Hydrogen Energy California
HEI	Hydrogen Energy International LLC
Hg	Mercury
HgA	mercury, absolute pressure
HHV	higher heating value
HMBP	Hazardous Materials Business Plan
HP	high pressure
hp	horsepower
HPC	high pressure compressor
HPT	high pressure turbine
HRA	human health risk assessment
HRSG	heat recovery steam generator
HSSE	Health, Security, Safety, and Environmental
HWCL	Hazardous Waste Control Law
Hz	Hertz
I-5	Interstate 5
i-C_4	iso-butane
i-C_5	iso pentane
IDLH	Immediately Dangerous to Life and Health
IEEE	Institute of Electrical and Electronic Engineers
IGCC	Integrated Gasification Combined-Cycle
IP	intermediate pressure
IPCC	Intergovernmental Panel on Climate Change
IPT	intermediate pressure turbine
K_2O	Potassium Oxide
KCFD	Kern County Fire Department
KOP	key observation point
KRFCC	Kern River Flood Control Channel
kV	kilovolt
KWBA	Kern Water Bank Authority
kw/m^2	kilowatts per square meter
LCLO	Lethal Concentration Law
LCP	Local Control Panel
LIN	liquid nitrogen
LORS	laws, ordinances, regulations, and standards
LOS	Level of Service
LOX	liquid oxygen
LP	low pressure
LPC	low pressure compressor
LTGC	Low Temperature Gas Cooling
LV	low voltage
MAC	Main Air Compressor
max	maximum
MCCs	motor control centers

MDEA	methyldiethanol amine
m	meter
mg/L	milligrams per liter
mgd	million gallons per day
MgO	magnesium oxide
MH	mobile home
min	minimum
mmBtu	million British thermal units
MMBtu/hr	million British thermal units per hour
mmscfd	million standard cubic feet per day
MMV	monitoring, measurement, and verification
MnO_2	manganese dioxide
m/s	meters per second
MSDS	Material Safety Data Sheet
MSL	mean sea level
MUTCD	Manual of Uniform Traffic Control Device
MV	emedium voltage
MW	megawatt
N_2	nitrogen
Na_2O	sodium oxide
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NaOH	sodium hydroxide
NB	northbound
n-C_4	normal butane
NDE	Non-Destructive Examination
NEPA	National Fire Prevention Association
NFPA	National Fire Protection Association
NESHAPs	National Emission Standards for Hazardous Air Pollutants
NGCC	natural gas combined cycle
NG/PW	natural gas interconnection and potable water pipeline linear
NGVO	National Geodetic Vertical Datum
NH_3	ammonia
Ni_2O_3	nickel (III) oxide
NIOSH	National Institute of Occupations Safety and Health
NiS	Nickel Sulfide
NOAA	National Oceanic and Atmospheric Administration
NO_2	nitrogen dioxide
NOI	Notice of Intention
NO_x	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NR	National Resource (District)
NRHP	National Register of Historic Places
NSPS	New Source Performance Standards
O&M	operation and maintenance

LIST OF ACRONYMS AND ABBREVIATIONS

O_2	free oxygen
O_3	ozone
OCA	Off-Site Consequence Analysis
OEHHA	Office of Environmental Health Hazard Assessment
OEHI	Occidental of Elk Hills, Inc.
OES	Office of Emergency Services
OHP	Office of Historic Preservation
OLM	Ozone Limiting Method
OS	Open Space (District)
OSHA	Occupational Safety and Health Administration
Oxy Elk Hills	Occidental Elk Hills
P_2O_5	Phosphorus Pentoxide
P&I	plant and instrument
PAI	Peak and Associates, Inc.
Pb	lead
PCE	Passenger car equivalent
PD	Precise Development (Continuing District)
PDCs	Power Distribution Centers
petcoke	petroleum coke
PG&E	Pacific Gas and Electric Company
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PMI	Positive Material Identification
PO	Port Organics Products, LTD
PPE	personal protective equipment
ppm	parts per million
ppmv	parts per million by volume
ppmvd	parts per million volumetric dry
ppmw	parts per million by weight
PRC	Public Resources Code
PSD	Prevention of Significant Deterioration
psi	pounds per square inch
psia	per square inch absolute
psig	pounds per square inch gauge
PTO	Permit to Operate
RCRA	Resource Conservation and Recovery Act
RECs	Recognized Environmental Conditions
REL	reference exposure limit
RMP	Risk Management Plan
ROG	reactive organic gases
ROW	right-of-way
RPM	revolutions per minute
RTP	Regional Transit Plan
RWQCB	Regional Water Quality Control Board
SACTI	Seasonal/Annual Cooling Tower Impact
SARA	Superfund Amendments and Reauthorization Act

SB	Senate Bill
SB	southbound
SCAQMD	South Coast Air Quality Management District
scf	standard cubic feet
SCR	selective catalytic reduction
sec/veh	seconds per vehicle
SiO_2	silicon dioxide
SHPO	State Historic Preservation Office
SILs	Significant Impact Levels
SIP	State Implementation Plan
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLF	Sanitary Landfill Facility
SNG	substitute natural gas
SO_2	sulfur dioxide
SO_3	sulfur trioxide
SO_4	sulfates
SO_X	sulfur oxide
SoCalGas	Southern California Gas
SOP	standard operating procedure
sp	spontaneous potential
SPCC	Spill Prevention, Control, and Countermeasures
SR	State Route
SrO	strontium oxide
SRU	sulfur recovery unit
SSJVIC	Southern San Joaquin Valley Information Center at California State University, Bakersfield
SSP	sulfur storage pit
STEL	short-term exposure limit
STG	steam turbine generator
stpd	short tons per day
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
SWS	Sour Water Stripper
Sy	specific yield
syngas	synthetic gas (mixture of hydrogen, carbon monoxide, and hydrogen dioxide)
TAC	toxic air contaminant
TCLP	toxic characteristic leachability protocol
TDS	total dissolved solids
TGTU	tail-gas treating unit
THI	total hazard index
TIBL	thermal internal boundary layer
TiO_2	Titania (titanium dioxide)
tpd	tons per day
tpy	tons per year

TBACT	toxics best available control technology
TQ	Threshold Quantity
TSDF	Treatment, Storage, and Disposal Facility
TSP	trisodium phosphate
UBC	Uniform Building Code
UFC	Uniform Fire Code
UPRR	Union Pacific Railroad
UPS	uninterruptible power supply
U.S.	United States
USACE	United States Army Corps of Engineers
USC	United States Code
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey
UST	underground storage tank
UTM	Universal Transverse Mercator
V	volt
V_2O_5	vanadium pentoxide
VAC	visual absorption capability
VOCs	volatile organic compounds
VRM	Visual Resource Management
VRMM	visual resource mitigation measure
VSOI	visual sphere of influence
WKWD	West Kern Water District
WSO	Work Service Office
ZLD	zero liquid discharge
$\mu g/m^3$	micrograms per cubic meter