

SJVAPCD RULES 4306 & 4320 CLEAR THE AIR

BOILERS

PUMPS

SYSTEMS

SERVICE

PARTS



R.F. MacDonald Co.

your boiler & pump solutions team

~ since 1956



Meet the new **2021 Boiler Emissions Rules** set by San Joaquin Valley Air Pollution Control District (SJVAPCD) and create a **Compliance Plan** with R.F. MacDonald Co. to meet the 2023-29 deadlines!

SJVAPCD RULES 4306 & 4320

Rule 4306:

Boilers: 5-75MMBTU must retrofit to 7 PPM NO_x by 12/31/2029*

Boilers: >75MMBTU/hr must retrofit to 5 PPM NO_x by 12/31/2029*

*ATC and compliance deadlines vary based on emission-permitted level



Rule 4320:

Boilers: 5-20MMBTU must retrofit to 5 PPM NO_x by 12/31/2023*

Boilers: >20MMBTU must retrofit to 2.5 PPM NO_x by 12/31/2023*

*Emissions Control Plan and ATC to be submitted by May 1, 2022



CONTACT YOUR LOCAL R.F. MACDONALD CO. REPRESENTATIVE TO DISCUSS OPTIONS FOR YOUR FACILITY



WHAT ARE YOUR OPTIONS?

BURNER RETROFIT & CONTROLS UPGRADE



SELECTIVE CATALYTIC REDUCTION



REPLACE YOUR EQUIPMENT



BURNER RETROFIT & CONTROLS UPGRADE SUB 5 PPM NO_x

NEW CLEAVER-BROOKS SBR-5 ULTRA LOW NO_x BURNER

ULTRA LOW-NO_x EMISSIONS - SUB 5 PPM

DUAL FUEL - NATURAL GAS WITH NO. 2 OIL OPTION; FUEL SWITCHOVER WITHOUT MECHANICAL ADJUSTMENTS

3-4% O₂ - ACROSS A WIDE LOAD RANGE

MAXIMUM EFFICIENCY - PROVIDED BY STANDARDIZED PARALLEL POSITIONING

OPERATIONAL RANGE - 6:1 TURNDOWN WHEN FIRING NATURAL GAS

UNIFORM FLAME - FOR EQUAL HEAT TRANSFER ALLOWED BY PREMIX FUEL

EASY ACCESS - AIR HOUSING FOR INTERNAL COMPONENTS

INTEGRATED CONTROLS - WITH REMOTE IoT MONITORING CAPABILITIES

SUPPORT - LOCALLY TRAINED REPS & CERTIFIED TECHNICIANS

SILENT OPERATION - WITH AN ADVANCED COMBUSTION AIR FAN WHEEL; LESS HORSEPOWER AND LESS NOISE

ULTRA LOW-NO_x/CO - ACHIEVED WITHOUT A FRAGILE SURFACE COMBUSTION BURNER HEAD, MAKING IT SAFER AND MORE RELIABLE



TOTAL INTEGRATION DOESN'T STOP WITH THE BURNER

SELECTIVE CATALYTIC REDUCTION

SUB 2.5 PPM NO_x • SUB 5 PPM NH₃ SLIP

SCR is a post-flue gas treatment that reduces NO_x emissions, using ammonia as a reducing agent. The mixture comes into contact with a catalyst, selectively transforming the NO_x into harmless nitrogen and water. Options are available for reducing CO emissions as well and can be integrated into a single packaged solution.



ANHYDROUS OR AQUEOUS AMMONIA

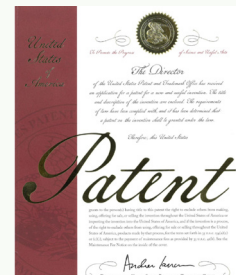
- CUSTOM AMMONIA FLOW CONTROL UNIT
- CUSTOM AMMONIA INJECTION GRID
- INTEGRATED CONTROLS
- REQUIRES RISK MANAGEMENT PLANNING
- STORAGE & HANDLING OVERSIGHT PER OSHA 1910.111

ANHYDROUS	AQUEOUS
3	2
Extreme	Moderate
Emergency Planning, Fire Dept. Audit & Training	Emergency Planning, Fire Dept. Audit & Training



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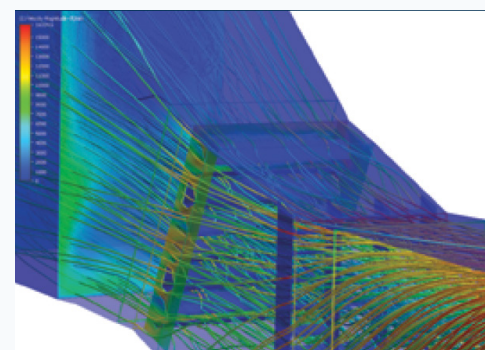
- **R.F. MACDONALD CO. PATENTED** DESIGN DOES NOT REQUIRE VAPORIZER
- DOES NOT REQUIRE RISK MANAGEMENT PLANNING
- ELIMINATES HAZARDS OF STORING AMMONIA
- REDUCES ELECTRICAL LOAD COSTS
- LOWER OPERATIONAL COST
- REDUCES FOOTPRINT



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1
Low
Training Only

R.F. MacDonald Co. ENGINEERING SERVICES *your boiler & pump solutions team* *~ since 1956*

- COLD FLOW MODELING (CFM) OR COMPUTATIONAL FLUID DYNAMICS (CFD)
- UTILIZES MULTIZONE INJECTION GRID
- 3D MODELING DESIGN — INTEGRATION WITH 3D SCANS
- CUSTOM CONTROLS INTEGRATION
- EMISSIONS CONTROL FOR VARIOUS FUELS
- INLET AND OUTLET SAMPLING GRIDS AVAILABLE



REPLACE YOUR EQUIPMENT



FIRETUBE BOILERS

INDUSTRIAL WATERTUBE BOILERS

CONDENSING HYDRONIC BOILERS

HEAT RECOVERY STEAM GENERATORS

ELECTRIC & ELECTRODE BOILERS

MODULAR STEAM BOILERS

SKID-MOUNTED BOILERS

WASTE HEAT BOILERS

COGENERATORS

STEAM SYSTEMS

THERMAL FLUID SYSTEMS

HOT WATER SYSTEMS

WATER HEATERS

BURNERS & CONTROLS

EXHAUST SOLUTIONS

PERMITTING, LAYOUT

PLANT MODIFICATIONS

CUSTOM-ENGINEERED SOLUTIONS

MANUFACTURER SPOTLIGHT



**INDUSTRIAL
COMBUSTION**

VAPOR POWER INTERNATIONAL



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Training based on rules set by
San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

Sign Up
for Training!



Read the
New Rules!



SCHEDULE A WEBINAR

R.F. MacDonald Co.

**LOCATIONS IN THE
SAN JOAQUIN VALLEY
AIR POLLUTION CONTROL DISTRICT**

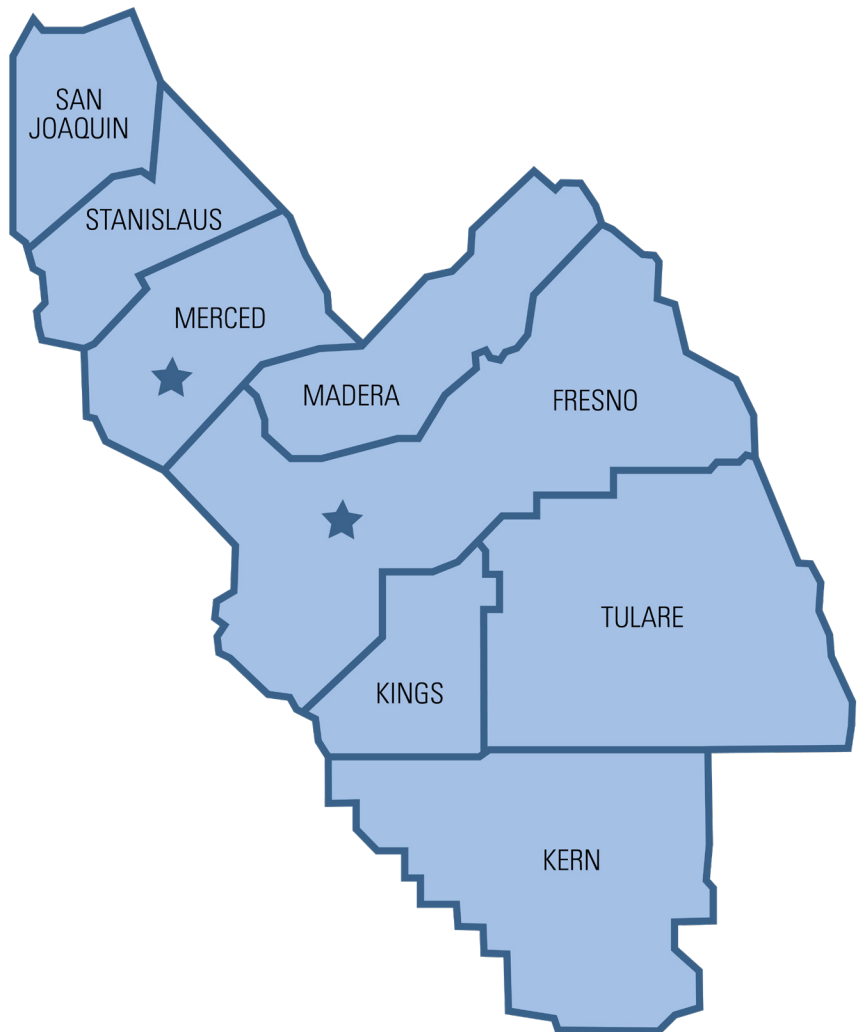
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E: info@rfmacdonald.com
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SITE VISITS OR VIRTUAL/ZOOM MEETINGS AVAILABLE TO PROVIDE SITE-SPECIFIC INDIVIDUAL NEEDS



**VIRTUAL
COURSE**



**SCHEDULE
A TIME**



**MICROSOFT
TEAMS**

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