



**FINAL**  
**DECISION OF ISSUANCE No. 0031**

Page 1 of 6

I. GENERAL INFORMATION

- a. ERC Owner/Percent Ownership: Nuevo Energy Company / 100%
- b. Primary Contact Name: Mr. John Deacon  
Primary Contact Company: Nuevo Energy Company (“Nuevo”)
- c. ERC Application Date: April 9, 2002
- d. ERC Application Completeness Date: June 20, 2002
- e. ERC Stationary Source Name: Nuevo – Orcutt Hill  
ERC Stationary Source Number: 2667
- f. ERC Facility Name: Orcutt Hill IC Engines  
ERC Facility Number: 4214
- g. ERC Source:        ATC Permit Required. ATC/PTO Number: 10840-01  
                              PTO Canceled. PTO Number: \_\_\_\_\_  
                              PTO Modification Required. PTO Mod No: see above  
                              Exempt. Cite: \_\_\_\_\_
- h. ERC Zone: North Zone
- i. ERC Source Type: Stationary

II. BACKGROUND

This ERC application is for the creation of NO<sub>x</sub>, ROC, CO and SO<sub>x</sub> ERCs from the electrification of the Clark RA-4 field gas compressor engine at Nuevo’s Orcutt Hill oil field lease. The Clark engine will be maintained under permit as a standby unit for operations of no more than 200 hours per year. A 150 hp TECO model AEEA electric compressor will be used.

Final  
Decision of Issuance No. 0031

Page 2 of 6

III. EMISSION REDUCTION CREDIT QUALIFICATION

- a. Total DOI ERCs Approved:
- |     |   |       |                  |
|-----|---|-------|------------------|
| NOx | = | 0.000 | tpq (3.140 tpy)  |
| ROC | = | 7.195 | tpq (28.949 tpy) |
| CO  | = | 2.681 | tpq (11.382 tpy) |
| SOx | = | 0.083 | tpq (0.543 tpy)  |
- b. Number of Emission Elements: 1
- c. Emission Element Data
- c.1 Emission Element Name: Clark RA-4 Compressor Engine
- EE/DOI Number: 01/0031
  - Emission Element Description: A 400 bhp field gas fired compressor IC engine. Manufactured by Clark, Model RA-4.
  - Undiscounted ERC Baseline (1):

NOx	=	0.000	tpq (3.140 tpy)
ROC	=	7.195	tpq (28.949 tpy)
CO	=	2.681	tpq (11.382 tpy)
SOx	=	0.083	tpq (0.543 tpy)
  - Technical Uncertainty Factor Used?  Yes  No
  - Technical Uncertainty Factor Description: n/a
  - Undiscounted ERC Baseline (2) - TUF Adjusted

NOx	=	0.000	tpq (3.140 tpy)
ROC	=	7.195	tpq (28.949 tpy)
CO	=	2.681	tpq (11.382 tpy)
SOx	=	0.083	tpq (0.543 tpy)
  - ERC Due To:
    - Emission Controls. *Electrification*
    - Shutdown
    - Reduction in Throughput
    - Other:
  - For Shutdowns/Reduction in Throughput
    - BACT Discounted
    - 20 Percent Minimum Discount
  - Amount of Shutdown Discount

Final  
Decision of Issuance No. 0031

Page 3 of 6

NOx = 0.000 tpq (0.000 tpy)  
ROC = 0.000 tpq (0.000 tpy)  
CO = 0.000 tpq (0.000 tpy)  
SOx = 0.000 tpq (0.000 tpy)

- Discounted ERC Baseline (3) - Shutdown/Reduction in Throughput Adjusted

NOx = 0.000 tpq (3.140 tpy)  
ROC = 7.195 tpq (28.949 tpy)  
CO = 2.681 tpq (11.382 tpy)  
SOx = 0.083 tpq (0.543 tpy)

- RACT/SIP Discounted  Yes  No

- RACT/SIP Applicable Rules: Rule 333

- Amount of RACT/SIP Discount: (Units previously subject to RACT provisions. No need to further adjust as the emissions already reflect RACT control)

- Discounted Baseline (4) - RACT/SIP Adjusted

NOx = 0.000 tpq (3.140 tpy)  
ROC = 7.195 tpq (28.949 tpy)  
CO = 2.681 tpq (11.382 tpy)  
SOx = 0.083 tpq (0.543 tpy)

- Special ERC Restrictions?  Yes  No

- ERC Termination Date: none (renewal required by September 2007 if not used)

- Are There Emission Element-Specific Conditions?  Yes  No

- Listing of Emission Element-Specific Conditions:

- (1) Clark RA-4 Compressor Engine Operating Limits. The Clark RA-4 compressor engine (#19766) shall not operate more than 200 hours per year.
- (2) Orcutt Hill Field Gas Compression. All field gas processed at the Orcutt Hill stationary source shall be processed by electrically-driven compressors.

- Attachments  Yes  No

- Attachment Name(s): Attachment 1.1 (*ERC Calculations*)

Final  
Decision of Issuance No. 0031

Page 4 of 6

- d. Evaluation Criteria Summary: This application was submitted pursuant to the criteria listed in Rule 806. The ERCs meet the basic qualification criteria of being surplus, quantifiable, permanent and enforceable.

Surplus – In order for the ERCs to be valid, they must be surplus to the APCD's Clean Air Plan. The 400-bhp IC engine is subject to RACT provisions. Source testing shows that these engines comply with Rule 333 requirements, thus any further reductions are considered surplus.

Quantifiable – Attachments 1.1 shows the APCD approved ERC calculations. The proposed ERCs are considered quantifiable. For all the combustions units subject to this DOI, there is no data available to assess the actual emissions of PM or PM10. As such, no credits can be assigned to these pollutants.

Permanent – Nuevo has committed to operating the electric-powered compressor at all times. The Clark RA-4 compressor engine will be maintained as a standby engine (for up to 200 hours per year) for use when the main compressor is off-line. Language has been added to the DOI that restricts operation of the Clark engine to less than 200 hours per year and also restricts all field gas compression to electrically driven units.

Enforceable – Nuevo's permits have been revised (ATC/PTO 10840) to limit use of the Clark RA-4 engine to no more than 200 hours per year. In addition, this DOI and its conditions remain in effect for the life of the ERCs. The APCD will periodically inspect the facility to ensure the equipment is being operated in the manner applied for in the DOI application.

Final  
Decision of Issuance No. 0031

Page 5 of 6

- e. Recommendation: Based on the ERC application, supplements thereof and the analyses and attachment contained within the DOI, the approval of the ERCs is recommended.  
Note:

\_\_\_\_\_  
Michael F. Goldman  
Evaluator

\_\_\_\_\_  
October 7, 2002  
Date

\_\_\_\_\_  
Reviewer

\_\_\_\_\_  
Date

\_\_\_\_\_  
Air Pollution Control Officer

\_\_\_\_\_  
Date

ATTACHMENTS

Final  
Decision of Issuance No. 0031

**DOI No. 0031: NUEVO ENERGY COMPANY - ORCUTT HILL  
Clark RA-4 Compressor Engine ERC Calculations**

Attachment: 1.1  
COMPANY: Nuevo Energy Company  
FACILITY: Orcutt Hill Compressor Plant  
DATE: 8/01/2002

Combustion Unit	BHP	ID #	Sulfur (as H <sub>2</sub> S)	Hrs/yr Hrs/qtr	Heat Input MMBtu/yr MMBtu/qtr <sup>a</sup>	EMISSION FACTOR [lbs/MMBtu]				
						NO <sub>x</sub>	ROC	CO	SO <sub>x</sub>	PM/PM <sub>10</sub>
Baseline Emissions Clark RA-4	400	19766	284	8,268 2,067	27,108 6,777	0.309	2.140	0.856	0.045	---
Standby Emissions Clark RA-4	400	19766	796	200 200	1,100 1,100	1.905	0.103	0.400	0.128	0.046

Combustion Unit	EMISSIONS [tons/yr] / [tons/qtr]				
	NO <sub>x</sub>	ROC	CO	SO <sub>x</sub>	PM/PM <sub>10</sub>
Baseline Emissions Clark RA-4	4.188 1.047	29.006 7.251	11.602 2.901	0.614 0.153	--- ---
Standby Emissions Clark RA-4	1.048 1.048	0.057 0.057	0.220 0.220	0.070 0.070	0.025 0.025
ERCs Clark RA-4	3.140 -0.001	28.949 7.195	11.382 2.681	0.543 0.083	0.000 0.000

Sulfur Data	
166	Jan-99
410	Apr-99
310	Aug-99
210	Oct-99
151	Jul-00
325	Nov-00
416	Jul-01
284	ppmv as H <sub>2</sub> S

Baseline Usage Data Clark RA-4 (K-2 Comp)	1999	2000	2001	3-Year Average
Hours	8,638	7,442	8,725	8,268
Fuel Use (MMSCF/yr)	24,381	24,857	27,602	25,613
HHV (Btu/scf)	1099	1070	1012	1,060
Heat Input (MMBtu/yr)	26,795	26,597	27,933	27,108

**Notes:**

- (a) Fuel use was averaged over three years (1999-2001). Baseline data taken from annual reports and source tests.
- (b) Clark RA-4 BSFC = 13,750 Btu/bhp-hr      HHV for Clark RA-4 Standby Mode = 1050 Btu/scf
- (c) NO<sub>x</sub>, ROC and CO emission factors for engine based on May 19, 2000 source test.
- (d) No data exists to quantify the emissions of PM and PM10 from the IC engine units.
- (e) Sulfur baseline data taken as the average of all available test results over the 3 year period.