BP Expl. Prudhoe GC 2 1a
6/13/80

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 10
SEATTLE, WASHINGTON 98101

APPLICATION OF: Atlantic Richfield Company P.O. Box 360 Anchorage, Alaska 99510 AND SOHIO Petroleum Company Pouch 6-612 Anchorage, Alaska 99502	No. PSD-X80-09 APPROVAL OF APPLICATION TO CONSTRUCT

Pursuant to the Agency regulations for the Prevention of Significant Deterioration of Air Quality (PSD) set forth at Title 40, Code of the Federal Regulations, Part 52 and based upon information submitted on October 17, 1979 and supplemented on December 13, 1979 and January 24, 1980 by the Atlantic Richfield Company and the SOHIO Petroleum Company, the Regional Administrator now finds as follows:

FINDINGS

1. The Atlantic Richfield Company and the SOHIO Petroleum Company (hereafter referred to as ARCO/SOHIO) propose to install forty-~~two~~ FOUR natural gas fired turbines and thirty-one gas fired heaters in the oil field at Prudhoe Bay, Alaska.

2. An analysis of projected emissions indicates that this project has the potential to emit more than 250 tons per year of nitrogen oxides (NO_x), particulate matter (PM) and

GPO-990-087

USEPA REG
0000187

BP Expl. Prudhoe GC 2 1d
6/13/80

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 10
SEATTLE, WASHINGTON 98101

APPLICATION OF: Atlantic Richfield Company P.O. Box 360 Anchorage, Alaska 99510 AND SOHIO Petroleum Company Pouch 6-612 Anchorage, Alaska 99502	No. PSD-X80-09 APPROVAL OF APPLICATION TO CONSTRUCT

Pursuant to the Agency regulations for the Prevention of Significant Deterioration of Air Quality (PSD) set forth at Title 40, Code of the Federal Regulations, Part 52 and based upon information submitted on October 17, 1979 and supplemented on December 13, 1979 and January 24, 1980 by the Atlantic Richfield Company and the SOHIO Petroleum Company, the Regional Administrator now finds as follows:

FINDINGS

1. The Atlantic Richfield Company and the SOHIO Petroleum Company (hereafter referred to as ARCO/SOHIO) propose to install forty-~~two~~ FOUR natural gas fired turbines and thirty-one gas fired heaters in the oil field at Prudhoe Bay, Alaska.

2. An analysis of projected emissions indicates that this project has the potential to emit more than 250 tons per year of nitrogen oxides (NO_x), particulate matter (PM) and

GPO-990-087

USEPA REG
0000187

carbon monoxide (CO), and is therefore subject to PSD review for those pollutants.

3. The proposed modification is located in an area designated as "Class II" under Section 162(b) of the Clean Air Act.

4. Modeling analyses of CO, NO_x, and PM have been conducted and demonstrate that while emissions of these pollutants will increase, the modification will not cause any violations of the applicable National Ambient Air Quality Standards or PSD increments so long as the plant is operated in accordance with the conditions specified below. With the application of best available control technology, as required by Section 165 (a)(4), operation of the proposed turbines and heaters will meet the applicable PSD requirements.

Accordingly, it is hereby determined that, subject to the conditions set forth below, Atlantic Richfield Company and SOHIO Petroleum Company will be permitted to install the subject turbines and heaters at Prudhoe Bay, Alaska.

APPROVAL CONDITIONS

1. Emissions of nitrogen oxides (NO_x), particulate matter (PM), and carbon monoxide (CO) shall not exceed the following:

Emissions Limitations

Location	Equipment	Pollutant (tons/yr) NO_x	CO	Part.
G.C. #1	*Turbines	2553	476	63
	*Heaters	184	32	19
G.C. #2	*Turbines	4810 ~~4615~~	897 ~~861~~	120 ~~115~~
	*Heaters	219	36	21
G.C. #3	*Turbines	2748 ~~2553~~	512 ~~476~~	68 ~~63~~
	*Heaters	184	32	19

GPO-990-087

Well Pads	*Heaters	133	13	8
Central Compressor Plant	*Turbines	646	120	16
	*Heaters	22	2	1
F.S. #1	*Turbines	3049	569	70
F.S. #2	*Turbines	3979	742	91
	*Heaters	35	8	5
F.S. #3	*Turbines	3979	742	91
Total		22151	4109	582

* <u>Gas Turbines</u>

NO_x	150 (14.4/Y)ppm**
CO	109.6 lb CO/10^6 scf (fuel)
PM	14 lb PM/10^6 scf (fuel)
	10% Opacity Limit

* <u>Process Heaters</u>

$>43 \times 10^6$ BTU/hr	NO_x	0.08 lb NO_x/10^6 BTU
$<43 \times 10^6$ BTU/hr	NO_x	0.19 lb NO_x/10^6 BTU
	CO	0.018 lb CO/10^6 BTU
	PM	0.011 lb PM/10^6 BTU
		5% Opacity Limit

** NO_x emissions factor for gas-fired turbines is modified by an efficiency factor (Y) which cannot exceed 14.4 kilojoules/watt hour (manufacturer's rated heat rate at rated peak load).

Based on 15% oxygen on a dry basis.

2. With the exception of NO_x, PM, and CO, increases in potential emissions of any pollutant regulated under the Clean Air Act resulting from this modification will be less than 250 tons per year.

3. ARCO/SOHIO shall notify Alaska Department of Environmental Conservation (ADEC) of any occurrence of any emissions in excess of limits specified in Condition Numbers 1 and 2 above; such notification shall be forwarded to ADEC

GPO-990-087

in writing in a timely fashion and in each instance no later than ten (10) days from the date of such occurrence. The notification shall include an estimate of the resultant emissions and a narrative report of the cause, duration and steps taken to correct the problem and avoid a recurrence. ARCO/SOHIO shall contemporaneously send a copy of all such reports to EPA.

4. This approval shall become void if on-site construction is not commenced within eighteen (18) months after receipt of the approval or if on-site construction once initially commenced is discontinued for a period of eighteen (18) months.

5. As approved and conditioned by this permit any construction, modification or operation of the proposed facility shall be in accordance with the application which resulted in this permit. Nothing in this permit shall be construed to relieve the Atlantic Richfield Company and the SOHIO Petroleum Company of its obligations under any state or federal laws including Sections 303 and 114 of the Clean Air Act.

6. Compliance with emission limitations shall be demonstrated by source tests and a program of emission monitoring as described below:

a. Compliance Demonstration:

Compliance testing shall be conducted within 60 days after achieving the maximum production rate at which the turbines or process heaters will be operated but not later than 180 days after startup of the specific emission source. The NSPS testing requirements for NO_x from gas

GPO-990-087

turbines (40 CFR 60.335) shall be followed for each turbine. The company may submit for EPA approval an alternative test plan for the gas turbines addressing such alternatives as factory testing rather than on-site testing and testing of a certain proportion of the gas turbines for each model group rather than each individual gas turbine. EPA Method 7 shall be used for NO_x from the process heaters. Only one of each kind of process heater must be tested. The company shall submit a test plan to EPA for approval to demonstrate that the heater tested in representative of the heaters for which testing is exempted. No compliance testing is required for CO or PM.

b. Emission Monitoring:

In addition to the NSPS requirements (40 CFR 60.334) one of the following monitoring schemes is required: (a) a continuous monitoring system shall be installed to monitor CO or O_2 for all gas-fired process heaters with a capacity greater than 43×10^6 BTU/hr. These monitors shall comply with the specification requirements in Appendix B of 40 CFR Part 60; or (b) a periodic monitoring program for the process heaters with a capacity greater than 43×10^6 BTU/hr using a portable CO or O_2 analyzer. The company shall submit a monitoring plan to EPA for approval describing the details of the program such as monitoring frequency, proposed instrumentation, and quality assurance procedures. Monitoring records shall be available to EPA upon request and shall be maintained for a period of two years.

7. EPA and ADEC shall be notified of the commencement of construction and the start up date within thirty (30) days of the date of their occurrence.

GPO-990-087

8. The United States Court of Appeals for the D.C. Circuit has issued a ruling in the case of Alabama Power Co. v. Douglas M. Costle (78-1006 and consolidated cases) which will have significant impact on the EPA PSD program. The applicant is hereby advised that this permit may be subject to reevaluation as a result of the final court decision and its ultimate effect.

Access to the source by EPA or State regulatory personnel will be permitted upon request for the purpose of compliance assurance inspections. Failure to allow such access is grounds for revocation of this permit.

JUN 13 1980

Date

L. Edwin Coate, Acting

for Donald P. Dubois

Regional Administrator

GPO-990-087