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April 22, 2002

Donald Van Buren, PE
Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109

Re Draft Title V Permit for Tosco Refining Company's Contra Costa Carbon Plant

Dear Mr. Van Buren

We are writing on behalf of the Plumbers and Steamfitters Union Local 342, the International Brotherhood of Electrical Workers Local 302 and the Boilermakers Union Local 549 with regard to the draft Title V permit ("the proposed Permit") for Tosco Refining Company's Contra Costa Carbon Plant[1] ("the Carbon Plant" or "the Plant"). The members of Locals 342, 302 and 549 construct and maintain commercial, residential and industrial projects, primarily in the vicinity of Contra Costa County. They are concerned with sustainable land use and development in Contra Costa County. Poorly operated and environmentally detrimental projects may jeopardize future jobs by making it more difficult and more expensive for business and industry to expand in the region, and by making it less desirable for businesses to locate and people to live here. Continued degradation can, and has, caused construction moratoriums and other restrictions on growth in the County that, in turn, reduce future employment opportunities. Additionally, workers themselves live in the communities that suffer the impacts of environmentally detrimental projects. Union members breathe the same polluted

[1] BAAQMD refers to this plant as the Tosco Refining Company's Contra Costa Carbon Plant. However, Phillips Petroleum Company purchased Tosco Corporation on September 17, 2001. (Letter from Stephanie J. Corcoran to BAAQMD (Sep. 18, 2001).) Since that time, Phillips has owned the Carbon Plant. Phillips requested that the District change the name of the Phillips 66 San Francisco Refinery Carbon Plant on February 8, 2002. (E-mail from Dale Iverson to Donald Van Buren.)

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air that others breathe and suffer the same health and safety impacts. Finally, union members are concerned about projects that carry serious environmental risks without providing countervailing employment and economic benefits to local workers and communities. Therefore, Locals 342, 302, 549 and their members have a strong interest in enforcing environmental laws such as the federal Clean Air Act[2] ("CAA" or "the Act").

We have reviewed the proposed Title V Permit for the Carbon Plant, the application materials supporting the proposed Permit, and the Plant's New Source Review files at the Bay Area Air Quality Management District ("BAAQMD").[3] Our review indicates that the proposed Title V Permit does not assure the Plant's compliance with all applicable requirements under the CAA.[4]

First, the Plant is part of the Phillips San Francisco Refinery in Rodeo and should be permitted as part of that stationary source. The failure to permit the Carbon Plant as part of the Refinery allows the Plant to escape the requirements of the Petroleum Refinery Maximum Achievable Control Technology ("MACT") standard. Those requirements should be imposed in the Plant's Title V permit, but are not.

Second, the Plant should have obtained a Prevention of Significant Deterioration ("PSD") permit in 1983, but did not. The failure to obtain this permit means that the Plant and the proposed Title V permit do not comply with all federally applicable New Source Review ("NSR") requirements.

Third, the proposed Permit must incorporate all applicable requirements from the State Implementation Plan ("SIP"), Acid Rain program and New Source Performance Standards program, but does not.

Fourth, the proposed Permit must ensure that all applicable requirements are enforceable, but does not.

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[2] 42 U.S.C. § 7401 *et seq.*

[3] We rely on many of these documents in our comments, and incorporate them by reference. Where we rely on other publicly-available documents that are cited herein, we also incorporate those documents by reference. Please contact us if you have any difficulty locating any documents that we cite, and we would be happy to provide you with a copy.

[4] The technical portion of our review was performed by our air quality consultant, Dr. Phyllis Fox.

Fifth, the proposed Permit is not valid if the District fails to adhere to applicable public comment procedures, which it did not.

The proposed Permit will not satisfy the requirements of the Clean Air Act until each of these shortcomings is corrected.

I. THE CARBON PLANT SHOULD BE PERMITTED AS PART OF THE PHILLIPS RODEO REFINERY

The District has proposed to permit the Carbon Plant as a stand-alone stationary source. However, the Plant should be treated as part of the Phillips Rodeo refinery for purposes of Title V permitting. This approach is consistent with numerous EPA interpretations of what constitutes a single "stationary source" under the CAA. It also ensures that the facility does not escape otherwise applicable requirements simply because it is located up to 500 feet from the Rodeo refinery boundary. The District should withdraw the proposed Permit and re-issue it as part of the proposed Title V permit for Phillips Rodeo Refinery.

Under the Title V program, a major source is defined as:

> [A]ny stationary source (or any group of sources that are located on one or more contiguous or adjacent properties, and are under common control of the same person (or persons under common control)) belonging to a single major industrial grouping and that are described in paragraph (1), (2), or (3) of this definition. For the purposes of defining "major source," a stationary source or group of stationary sources shall be considered part of a single industrial grouping if all of the pollutant emitting activities at such source or group of sources on contiguous or adjacent properties belong to the same Major Group (i.e., all have the same two-digit code) as described in the Standard Industrial Classification Manual, 1987. (40 C.F.R. § 70.2.)

Thus, to be considered a single stationary source, two or more facilities must belong to the same major industrial grouping, be under common control, and be located on contiguous or adjacent properties.

There is no question that the Carbon Plant belongs to the same major industrial grouping as the Phillips Rodeo Refinery ("29") and that both facilities are under the common control of the Phillips Petroleum Company (*see, e.g.*, Letter from Stephanie Corcoran, Phillips 66, to BAAQMD (Sept. 18, 2001)). The only remaining

question is whether the two facilities are "located on one or more contiguous or adjacent properties."

The information that we have reviewed suggests that the two facilities are contiguous, separated only by a railroad track. Numerous figures in the Draft Environmental Impact Report ("DEIR") for the Unocal Reformulated Gas Project[5] indicate that the Refinery property line extends east of Interstate 80 to the Atchison Topeka and Santa Fe Railroad, which serves the Carbon Plant. (See the maps in Exhibit 1 to these comments.) The Title V Application indicates that the Carbon Plant occupies about 7 acres of the 260-acre Plant property, which is located at 2101 Franklin Canyon Road in Rodeo. (Title V Application,[6] p. 1.) The files that we reviewed did not reveal the boundary of the 260-acre Plant property. However, the area bounded by the Atchison Topeka and Santa Fe rail line and Highway 4 (Franklin Canyon Road) is about 260 acres. Thus, we believe that the Carbon Plant property and the Refinery property share a boundary about 500 feet north of the Plant's processing facilities, along a portion of the rail line.

Even if the two facilities are geographically separated by 500 feet – the estimated distance between the Plant and the rail line to the north – EPA has determined that "a physical separation of property does not in itself constitute separate sources." (Letter from Winston A. Smith, EPA, to Randy C. Poole, Mecklenburg County Department of Environmental Protection, p. 4 (May 19, 1999) ("Smith Letter") (Exhibit 2).) In fact, EPA "has never specifically defined by regulation an exact separation distance that would cause two facilities to be considered as located on adjacent or contiguous properties." (Smith Letter, p. 2.) Instead, it has consistently taken the approach that such determinations must be made on a case-by-case basis (*ibid.*; *see also* 45 Fed. Reg. 52695 (Aug. 7, 1980)) based on a "common sense notion" of source. (Smith Letter, p. 5.)

Review of EPA case-by-case determinations reveals a set of factors that inform the decision of whether two properties are "adjacent or contiguous" for purposes of Title V permitting. Relevant factors include the distance between the two facilities and the interconnections between the two facilities, including physical connections (*e.g.*, pipelines, rail lines) and production interdependence (*e.g.*, is one

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[5] Contra Costa County, Draft Environmental Impact Report for the Unocal Corporation Reformulated Gasoline Project, Volumes 1 and 2, June 1994.

[6] Union Oil Company, Major Facility Review Initial Permit Application, Plant #22, 2101 Franklin Canyon Road, Rodeo, California, October 17, 1995.

facility providing the production inputs of the other facility?) The Phillips Refinery and Carbon Plant in Rodeo meet each of these factors.

For example, EPA found a brewery and a wastewater disposal land farm separated by a distance of 6 miles to be "contiguous or adjacent" where a pipeline connected the facilities and the land farm operation was an "integral part" of the brewery operations, "*i.e.*, land application at the land farm is the means chosen by Anheuser-Busch to dispose of the ethanol contaminated process water from the brewery operations." (Smith Letter, pp. 4-5.) Here, the Refinery and Carbon Plant are no more than 500 feet apart and the calcining operation is an "integral part" of the refining operation in that coke calcining is the "means chosen" by Phillips to upgrade the by-product petroleum coke generated in the refining process for subsequent sale.

Similarly, EPA found two G.M. plants separated by a distance of approximately 4,500 feet "contiguous or adjacent" where one plant made auto bodies that were transported by truck to the other plant for use in final assembly. (Smith Letter, p. 3.) Here, 100% of the feed to the Carbon Plant is produced in Coking Unit 200 at the Phillips San Francisco Refinery.[7] This coke is transported from Refinery Gate 46, on San Pablo Avenue, to the Carbon Plant in 90 coke trucks per day. (DEIR, p. 12-25.)

Further, EPA has developed the following set of questions to help a permitting agency determine whether two facilities should be considered "adjacent" and part of the same stationary source.

> Was the location of the new facility chosen primarily because of its proximity to the existing facility, to enable the operation of the two facilities to be integrated? ...
>
> Will materials be routinely transferred between the facilities? Supporting evidence for this could include a physical link or transportation link between the facilities, such as a pipeline, railway, special-purpose or public road, channel or conduit.

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[7] Letter from K.L. Openshaw, Senior Vice President, Union Chemicals Division, Union Oil Company of California, to Peter Hess, Deputy Air Pollution Control Officer, BAAQMD, Re: Union Chemicals Cogeneration Permit, Contra Costa Plant, September 20, 1982. (Exhibit 3.) See also Docket No. 1068, Union Oil Appeal of Permit Condition Relating to District Rule 2-1-403, Cogeneration Facility.

> Will managers or other workers shuttle back and forth to be involved actively in both facilities? Besides production line staff, this might include maintenance and repair crews, or security or administrative personnel.
>
> Will the production process itself be split in any way between the facilities, i.e., will one facility produce an intermediate product that requires further processing at the other facility, with associated air pollutant emissions? (Smith Letter, pp. 5-6.)

The Carbon Plant satisfies all of these criteria. It is located on a contiguous or nearly contiguous parcel, 500 feet from the Refinery's eastern boundary. Coke from the Refinery Coker is routinely transported over public roads in 90 trucks per day to the Carbon Plant. The engineer who prepared the Title V Application, Dale Iverson, has historically worked at the San Francisco Refinery and was located at the San Francisco Refinery at the time the Title V Application was prepared.[8] Finally, the raw coke, an intermediate product, is further processed at the Carbon Plant. As described in the Reformulated Fuels EIR, "petroleum coke is transported off-site for further processing before delivery to Unocal customers." (DEIR, pp. 3-22, 3-25.)

Whether to treat these two facilities as a single source for purposes of Title V is not merely a paper exercise with no environmental consequences. The Carbon Plant includes a number of emission sources that potentially would be covered by federal and District regulations if the Plant were considered part of the Refinery. These include diesel and oil storage tanks, a gasoline dispensing facility, combustion sources, and a wastewater treatment system (e.g., coke quench water settling and containment ponds). There are several additional regulations that apply to these emission sources when located in refineries that do not apply to the same emission sources located in the Carbon Plant. These include, at a minimum, the following:

40 CFR 61 Subpart FF
40 CFR 63, Subpart G
40 CFR 63, Subpart H
40 CFR 60, Subpart J

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[8] Mr. Iverson's phone number, as reported in the transmittal letter for the Title V Permit Application, is the main number of the San Francisco Refinery.

40 CFR 60 Subpart VV
40 CFR Subparts K, Ka, or Kb
40 CFR Part 63 Subpart CC
40 CFR Subpart QQQ
BAAQMD Rules 7, 8-1, 8-5, 8-8, 8-18, 8-28, 9-10

In addition, the Carbon Plant emits approximately 70 tons per year of hydrogen chloride and is unquestionably a major source of hazardous air pollutants. The District failed to perform a MACT analysis of the facility, presumably because the District determined that the Carbon Plant did not fall under one of the identified industrial source categories that must comply with MACT standards. However, if the Carbon Plant is part of Phillips' San Francisco Refinery, then it must comply with Petroleum Refinery MACT standards. The San Luis Obispo Air Pollution Control District recognized the applicability of the Petroleum Refinery MACT standard to the Santa Maria coke calcining plant when it issued a Title V permit to the Santa Maria refinery. (*See* Santa Maria Refinery Title V permit at http://yosemite.epa.gov/R9/AIR/EPSS.NSF/735056a63c1390e08825657e0075d180/4e7ded75ccb082ef8825676100629d0a?OpenDocument&Highlight=0,calciner and staff report at http://yosemite.epa.gov/R9/AIR/EPSS.NSF/735056a63c1390e08825657e0075d180/ca103dcd08f3fd93882567610062c80d?OpenDocument&Highlight=0,calciner .)

The District should withdraw its proposed Permit for the Carbon Plant and re-issue a draft Title V permit for the Plant as part of the draft Title V permit for Phillips Rodeo refinery.

II. THE PROPOSED TITLE V PERMIT DOES NOT ASSURE COMPLIANCE WITH APPLICABLE REQUIREMENTS

All sources subject to Title V must have a permit to operate that "assures compliance by the source with all applicable requirements." (40 CFR § 70.1(b); 42 U.S.C. § 7661c(a).) Applicable requirements include "the requirement to obtain preconstruction permits that comply with applicable preconstruction review requirements under the Act, EPA regulations, and SIP's."[9] Applicable requirements also include "all Federal regulations applicable to the source such as ... national emission standards for hazardous air pollutants, new source performance

[9] Letter from John Seitz, EPA, to Mr. Robert Hodanbosi *et al.*, Enclosure A, p. 2 (May 20, 1999).

standards, and the applicable requirements of SIP's and permits issued under SIP-approved permit programs."[10]

Here, the proposed Permit fails to incorporate several applicable requirements. First, the Carbon Plant failed to obtain preconstruction permits that comply with applicable preconstruction review requirements under the Act. The Plant should have obtained a PSD permit in 1983, but did not. EPA has made clear that, during the Title V permitting process, it:

> expects companies to rectify past noncompliance as it is discovered. Companies remain subject to enforcement actions for any past noncompliance with requirements to obtain a permit or to meet air pollution control obligations.[11]

Therefore, the Plant must rectify its past noncompliance with the Act by obtaining a PSD permit that complies with the terms of the Act.

Second, the proposed Permit fails to incorporate all requirements in existing permits issued under SIP-approved permit programs and the applicable requirements of SIP's.

Third, the proposed Permit fails to incorporate all Federal regulations applicable to the source, including Acid Rain requirements and new source performance standards.

The District must incorporate each of these requirements (including the terms of any new NSR permits) into the proposed Title V permit before the Title V permit will assure compliance with all applicable requirements.

A. The Plant Should Have Obtained a PSD Permit in 1983, But Did Not

The Carbon Plant heat treats raw petroleum coke to form crystalline carbon suitable for aluminum anode manufacturing. The facility consists of two rotary

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[10] *Id.*, Enclosure A, p. 1.

[11] Memorandum for Kathie A. Stein and Lydia N. Wegman, EPA, re Initial Operating Permit Application Compliance Certification Policy (July 3, 1995) (emphasis added).

kilns where petroleum coke flows countercurrent to a stream of hot combustion gases that calcine the coke. The hot gases, which contain high concentrations of entrained carbon dust, exit the kilns and enter pyroscrubbers. The pyroscrubbers are afterburners that burn the carbon in the dust to reduce particulate matter emissions.[12]

The files indicate that the facility is a major facility under the PSD regulations because it emits more than 100 ton/yr of SO_2 and NOx. Major modifications were made to this facility in 1976-1977 and again in 1983. We have been unable to evaluate the 1976-77 modifications due to the late receipt of the files However, the 1983 modifications caused emission increases that exceeded the PSD significance thresholds for sulfuric acid mist and NOx at 40 CFR 52.21(b)(23).

Our review of the files indicates that the Plant never received a PSD permit for the 1983 modifications, but should have. The Carbon Plant must rectify its past noncompliance with the Act by obtaining a PSD permit that complies with the terms of the Act. In addition, the District must incorporate the terms of this new permit into its proposed Title V permit before the Title V permit will assure compliance with all applicable requirements.

Prior to 1983, the pyroscrubber gases were vented to atmosphere through a "hot" stack at 1600 F. The pyroscrubbers were used intermittently as afterburners to ignite residual coke particles. In 1983, waste heat recovery boilers were installed downstream of the pyroscrubbers to recover the energy contained in the pyroscrubber exhaust gases, reducing the exhaust gas temperature to 400 F.[13] The waste heat is captured in the waste heat recovery boilers and used to produce about 225,000 pounds per hour of superheated steam, which was routed to a 30-MW[14] steam turbine to generate electricity.[15] Exhaust from the boilers is routed through fabric filters to remove PM10 and thence vented to atmosphere through two new

[12] In the Matter of the Application of Union Oil Company of California, docket No. 1063, Appeal, Filed December 6, 1982.

[13] Memorandum to T.E. Perardi from G. Kendall, Re: Union Chemicals Cogeneration Project Ambient Air Quality Impact Analysis for SO2, July 15, 1982 (Exhibit 4).

[14] The cogeneration facility was described as a 25-MW facility in the 1982 Cogeneration Facility Application and other materials in District files. However, the Title V Application describes the steam turbine as operating a 30-MW generator. (Title V Application, p. 3.)

[15] Frederiksen Engineering, Application to BAAQMD, Exhibit D, Cogeneration Typical Operation One Kiln Normal Conditions (Exhibit 5).

"cold" stacks. The new cogeneration facility started operation on January 13, 1984.[16]

These modification triggered PSD review for both sulfuric acid mist ("SAM") and NOx. The files indicate that in 1982, the facility emitted 788 ton/yr of NOx[17] and 1,305 ton/yr of SOx.[18] Because the facility emitted more than 100 ton/yr of NOx and SOx, it was a major facility in 1982. Thus, the addition of the cogeneration facility in 1983 constituted a modification of a major facility. A PSD review is trigger if a modification of a major facility exceeds the significant emission thresholds at 40 CFR 52.21(b)(23). As demonstrated below, the addition of the cogeneration facility in 1983 exceeded the significance thresholds for both sulfuric acid mist and NOx and thus should have gone through PSD review.

Sulfuric Acid Mist ("SAM")

The combustion of fuels containing sulfur converts the fuel sulfur into a mixture of gaseous sulfur dioxide (SO_2) and sulfur trioxide (SO_3). The SO_3 combines with water to form sulfuric acid or H_2SO_4. The SO_3 and H_2SO_4 combined are referred to as sulfuric acid mist or "SAM."[19] The PSD significance threshold for sulfuric acid mist is 7 tons/year. (40 C.F.R. § 52.21(b)(23)(i).)

In 1982, prior to the addition of the cogeneration facility, a source test on the kiln #2 stack indicated that the emissions of sulfuric acid mist averaged 6.25 lb/hr, or about 4% of the total sulfur oxide emissions. This is consistent with measurements made in the South Coast on two similar facilities (KVB 6/76,[20] Table K-I) and with measurements made on large numbers of other similar combustion sources, including gas turbines and boilers, with similar stack gas temperatures.

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[16] Letter from R.A. Royce, Plant Superintendent, Union, to David Dixon, Permit Services Division, undated.

[17] Frederiksen Engineering, Application to BAAQMD, Exhibit D, Cogeneration Typical Operation One Kiln Normal Conditions.

[18] Truesdail Laboratories, Inc., Report: #2 Kiln Stack at Contra Costa Plant, Sulfur Oxides Emissions, November 11, 1982 (Exhibit 6).

[19] SAM is normally operationally defined as the sum of SO_3 and H_2SO_4, as measured by EPA Method 8.

[20] KVD, Inc., Control of Oxides of Sulfur from Stationary Sources in the South coast Air Basin of California, NTIS PB261754, June 1976.

The amount of SAM present in exhaust gases depends on the equilibrium temperature and oxygen content of the exhaust gases. Cooling of the exhaust gases and catalytic reactions with metal surfaces of the added heat recovery equipment results in conversion of a portion of the SO_2 to sulfur trioxide. At temperatures below about 500 F, most all of the SO_2 is converted to SO_3. (KVB 6/76, p. 7.) The addition of the cogeneration facility in 1983 reduced the gas temperature from 1600 F to 400 F and added new catalytic surfaces, the heat recovery boilers. These two changes would have resulted in the formation of large amounts of SO_3 that were not formerly present.

We were unable to find any source tests for SAM that were conducted after the cogeneration facility was added. However, thermodynamic equilibrium calculations presented by others (KVB 6/76, Fig. 2-2) indicate that at 1600 F and 10% oxygen by volume, about 10% of the sulfur oxides would be present as SAM. This compares favorably with 4% to 7% measured in the Truesdail source test on this facility and 5% to 10% measured in the South Coast on two similar carbon plants. (KVB 6/76, Table K-I.) When the exhaust temperature was lowered from 1600 F to 400 F in the heat recovery boilers, these same equilibrium curves indicate that essentially 100% of the sulfur oxides would be converted to SAM. (KVB 6/76, Fig. 2-2.)

Thus, the addition of the cogeneration facility could potentially increase SAM emissions from 6.25 lb/hr measured in the 1982 source test to 191 lb/hr per kiln after addition of the cogeneration facility. This represents an increase in the potential to emit of SAM of 1,673 ton/yr, substantially exceeding the PSD significance threshold of 7 ton/yr.

It is unlikely that equilibrium conditions would be achieved and that 100% of the sulfur oxides would be converted to SO_3. However, it is reasonable to expect, based on well established chemical principles, that some increase in the conversion of SO_2 to SO_3 would occur. The SAM PSD significance threshold of 7 ton/yr represents an increase of 1.6 lb/hr for the facility or about 0.8 lb/hr per kiln. This represents a less than 1% increase in the conversion of SO_2 to SO_3, which is highly plausible, given the chemistry of system.[21] Therefore, this facility should have undergone PSD review for SAM in 1982. The files that we reviewed contain no

[21] C.F. Cullis and M.F.R. Mulcahy, The Kinetics of Combustion of Gaseous Sulphur Compounds, Combustion and Flame, v. 18, 1972, pp. 225-292.

evidence that this facility has ever undergone PSD review or been issued a PSD permit.

In 1982 when the cogeneration facility was being permitted, it was feasible and cost-effective to reduce SOx emissions. (KVB 6/76, Appx. K.) Further, at that time, the SCAQMD had adopted a regulation requiring an 80% reduction in SOx emissions from coke calcining kilns.[22] Thus, PSD review would have resulted in a substantial reduction in SOx emissions.

Nitrogen Oxides (NOx)

Nitrogen oxides (NOx) produced during combustion originate from two sources. Thermal NOx is formed by the fixation of molecular nitrogen in air. Fuel NOx is formed by the oxidation of chemically bound nitrogen in the fuel. The nitrogen content of natural gas is very low. Therefore, NOx formed during the combustion of natural gas is essentially all thermal NOx. However, coke contains nitrogen. When coke is burned, as in the pyroscrubbers, it additionally forms fuel NOx.

The 1983 addition of the cogeneration facility increased NOx emissions from three sources, increased firing of natural gas in the pyroscrubbers, two new baghouse natural-gas-fired preheaters, and increased conversion of coke nitrogen to NOx.

This modification changed the method of firing the pyroscrubbers. Prior to 1983, the pyroscrubber burners were fired only during startup, operational upsets, and routine shutdowns, but not during normal operating conditions. The 1983 modifications included new pyroscrubber burners and changed the mode of burner operation, from occasional firing to routine firing. After the addition of the cogeneration facility, the afterburners were fired to increase the heat load and hence steam production to adjust the power output of the turbine generator. (Title V Application, p. 2.) Thus, the addition of the cogeneration facility resulted in the pyroscrubbers being used like duct burners in a conventional combined-cycle power

[22] South Coast Air Quality Management District, Rule 1119 -- Petroleum Coke Calcining Operations - Oxides of Sulfur, Adopted March 2, 1979.

plant. The draft Title V permit indicates that the new pyroscrubber burners are rated at 30 MMBtu/hr. (BAAQMD 12/7/01.[23])

This change in operational mode increased the fuel use from 14,000 million Btus per year ("MMBtu/yr") of natural gas per burner to 91,320 MMBtu/yr for one pyroscrubber and 88,200 MMBtu/yr for the other. (BAAQMD 12/7/01.) However, the resulting permit contained no limit on firing rate and the draft Title V permit contains no limit on firing rate. Thus, for purposes of estimating the potential to emit NOx, the 1983 modification increased the firing rate from 14,000 MMBtu/yr to 262,800 MMBtu/yr per burner or by a total of 497,600 MMBtu/yr.[24] In addition to the change in operation of the pyroscrubbers, two new 9 MMBtu/hr baghouse preheaters were added, increasing fuel use by an additional 157,680 MMBtu/yr.[25] Therefore, the 1983 modifications increased potential natural gas firing by 655,280 MMBtu/yr.

In addition, the Title V Application indicates that "occasionally, a portable boiler (less than 10 MM Btu) is rented to assist in cold startup of the steam turbine." (Title V Application, p. 3.) This rental boiler was not described in the 1982 cogeneration permit file, and is not listed in the draft Title V Permit, but is clearly required to support the cogeneration facility. Thus, emissions from this boiler should be included in the NOx potential to emit. We cannot reasonably estimate these emissions as the files we reviewed do not indicate the annual firing rate of the rental boiler. However, unless the rental boiler is restricted to use only during startup, the potential to emit should assume continuous operation of the boiler.

According to a survey conducted by CARB of fired sources in California in the mid-1980s, the NOx emission rate from natural-draft refinery heaters was 0.14 lb/MMBtu. (CARB 4/29/87,[26] Table VII-2.) These heaters are the fired sources

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[23] Letter from Donald P. Van Buren, PE, BAAQMD, to Dale G. Iverson, Tosco Refining Company, December 7, 2001.

[24] Increase in firing rate of pyroscrubber burners = (30 MMBtu/hr)(8760 hr/yr) - 14,000 MMBtu/yr = 248,800 MMBtu/yr per pyroscrubber burner.

[25] Letter from W. de Boisblanc, BAAQMD, to Robert Hall, Union Chemicals Division, Re: Application No. 28445, Permit to Operate, February 3, 1984.

[26] California Air Resources Board (CARB), Technical Support Document for a Suggested Control Measure for the Control of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators and Process Heaters, April 29, 1987.

closest to the pyroscrubbers (afterburners) and the baghouse preheaters. This emission rate is consistent with the emission rate recommended by the BAAQMD and adopted by Unocal in the Title V permit application. (Title V Application, Table 4.2.) Therefore, this modification increased the NOx potential to emit by at least 45.9 ton/yr[27] from the firing of natural gas. The rental boiler is not included in this estimate and would increase NOx emissions by an additional 6.1 ton/yr.

In addition to increased NOx from increased conventional firing of natural gas, this modification additionally increased fuel-derived and higher temperature thermal NOx. The pyroscrubbers are afterburners that ignite the coke dust that escapes from the kilns. (KVB 6/76, p. K-1.) This would increase temperatures compared to conventional firing of natural gas and convert some of the nitrogen in the coke into additional NOx. This contribution to NOx cannot be estimated accurately because the file does not contain any characterization data for the coke fines that are ignited in the pyroscrubbers or the mass flow rate of coke fines into the pyroscrubbers. However, it can be roughly estimated from the design solids flow rate of 51 lb/hr of coke fines at the exit of the pyroscrubbers[28] and a NOx emission rate of 3.75 lb/ton. (Title V Application, Table 4.3.) This amounts to about 0.8 ton/yr of additional NOx.[29] Thus, total potential to emit NOx would be about 47 ton/yr. This would increase to 53 ton/yr if continuous operation of the rental boiler were included.

This exceeds the PSD significance level of 40 ton/yr for NOx and should have triggered PSD review for NOx in 1982. At that time, it was feasible and cost effective to use low-NOx burners. (CARB 4/27/87, § VIII.) Thus, PSD review would have resulted in a reduction in NOx emissions.

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[27] Increase in NOx from increase in natural gas use = (100 lb/MMscf)(309,200 MMBtu/yr)/(1000 Btu/scf) = 30,920 lb/yr = 15.5 ton/yr.

[28] Frederiksen Engineering, Application to BAAQMD, Exhibit D.

[29] Increase in NOx potential to emit from combustion of coke in pyroscrubbers = [2 units][(51 lb solids/hr)(8,760 hr/yr)/(2000 lb/ton)][3.75 lb NOx/ton solids] = 1,675 lb/yr = 0.84 ton/yr.

B. The Permit Does Not Incorporate All of The Requirements of Existing Permits or All Applicable District Regulations

The proposed Permit inexplicably excludes several existing requirements, including requirements imposed in existing Authorities to Construct for the Plant and applicable District rules.

The District issued an Authority to Construct for two Sodium Carbonate Storage Silos (No. S-41 and S-42) and two Dry Sorbent Injection Systems (No. A-14 and A-15) on February 6, 2001. These two sources and abatement devices are not identified in the Title V permit. These sources and abatement devices should be identified in the Permit along with a description of the processes and products, the associated emissions, a list of applicable requirements (including permit condition 17820), a compliance plan, and certification of compliance with all applicable requirements.

Neither the proposed Title V permit nor the permit application address the requirements of Title VI, Ozone Depleting Compounds ("ODCs"). At least one source of ODCs potentially exists at the facility. This source would be refrigeration units located in the buildings such as the Quality Control Laboratory. Other sources of ODCs may also be present.

In addition, several applicable requirements are identified as General Facility-Wide Applicable Requirements in the Title V application but are not included as requirements in the proposed Permit. Requirements that are excluded from the proposed Permit include the following:

Regulation 8 – Rule 4 – General Solvent and Surface Coating Operations
Regulation 8 – Rule 15 – Emulsified and Liquid Asphalts
Regulation 8 – Rule 19 – Surface Coatings of Miscellaneous Metal Parts and Products
Regulation 8 – Rule 40 – Aeration of Contaminated Soil and Removal of Underground Storage Tanks
Regulation 8 – Rule 47 - Air Stripping and Soil Vapor Extraction Operations

Finally, the proposed Permit excludes several additional applicable requirements that were not identified as General Facility-Wide Applicable Requirements in the Title V application. Excluded, but applicable, requirements include the following regulations:

Regulation 7 – Odorous Substances
Regulation 8-16 – Organic Compounds - Solvent Cleaning Operations
Regulation 8-51 – Organic Compounds – Adhesive and Sealant Products
Regulation 11-2 – Hazardous Pollutants – Asbestos Demolition, Renovation and Manufacturing
Regulation 12-4 – Miscellaneous Standards of Performance - Sandblasting

The District should modify the proposed Permit to include all of these applicable requirements.

C. The Permit Does Not Incorporate Applicable Acid Rain Program Requirements

The Carbon Plant appears to be subject to the Clean Air Act's Acid Rain requirements. (*See* 42 U.S.C. §§ 7651 *et seq.*) The District should revise the proposed Permit to address the applicability of the Acid Rain provisions and incorporate all applicable requirements.

A facility is an "affected source" under the Acid Rain program if the unit is a cogeneration facility which "in any three calendar year period after November 15, 1990, ... sells to a utility power distribution system an annual average of more than one-third of its potential electrical output capacity and more than 219,000 MWe-hrs actual electric output (on a gross basis)." (40 C.F.R. § 72.6(b)(4)(i).)

EPA has already determined that a coke calcining plant almost identical to this one is a cogeneration facility under the Acid Rain regulations. (*See* Letter from Brian J. McLean, EPA, to Philip L. Frederickson, Conoco (Feb. 26, 1999) ("McLean Letter") (Exhibit 7).) Moreover, Tosco has explained that, in calendar year 2000, it sold more than one-third of its potential electrical output to a utility power distribution system. (Letter from Tosco Refining Company to Donald Van Buren, BAAQMD (Feb. 12, 2001.) The files contain insufficient information to determine whether the Carbon Plant sold more than 219,000 Mwe-hrs gross electric output to a utility power distribution system in any three calendar year period after November 15, 1990. The District must obtain the records from the Carbon Plant detailing its electrical sales between 1990 and 2002 to determine whether the Plant meets this requirement.

The Plant clearly has the capacity to meet this requirement. The cogeneration facility includes a 30-MW generator. (Title V Application, p. 3.) According to correspondence from the Applicant, the Carbon Plan itself uses 2.1 MW of the output (Tosco Letter 2/12/01), leaving the balance or up to 27.9 MW for sale.

If the Plant is an "affected source," which it appears to be, it must obtain an Acid Rain permit and comply with other applicable requirements of the Acid Rain program. (*See generally* 40 C.F.R. § 72.9.) The District must also incorporate those requirements into the facility's Title V permit. The District cannot satisfy this requirement until it obtains additional information that definitively addresses the applicability of Acid Rain requirements to the Plant.

D. The Permit Does Not Incorporate Applicable New Source Performance Standards

The District incorrectly concluded that the new source performance standards contained in 40 C.F.R. Part 60, subparts D and Da do not apply to the Carbon Plant. In fact, these sections contain applicable requirements that must be incorporated into the Plant's Title V permit, unless the output of the cogeneration facility is limited to less than 25 MW.

The District originally determined that the provisions of Part 60, subparts D and Da apply to the Plant. (*See* Letter from Donald Van Buren, BAAQMD, to Dale Iverson (Dec. 7, 2001).) However, it ultimately determined that these sections do *not* apply based on an incorrect determination that petroleum coke is not a fossil fuel. (E-mail from Donald Van Buren to Dale Iverson (1/11/02).) The District based this determination on a 1983 memo from EPA. The conclusion of that memorandum has been superseded by subsequent determinations from EPA.

For example, on February 26, 1999, EPA found that kilns combusting petroleum coke and natural gas in an almost-identical coke calcining facility were "fossil-fuel fired combustion device[s]." (McLean Letter, p. 1.) This more recent finding from EPA clearly supersedes a 1983 memo.

Moreover, the 1983 determination relies on a definition of "fossil fuel" in 40 C.F.R. § 60.41b. However, this very same section defines the term "coal," which is clearly a "fossil fuel," as including "petroleum coke." Petroleum coke is also widely considered to be a fossil fuel that is used to produce useful heat. (See Region 4

letter describing in part, "KDAQ approved the source's request to burn petroleum coke (or petcoke) as a fuel in Emission Units 1 and 2 (Indirect Heat Exchangers)".)[30] Petroleum coke is also commonly combined with coal and used as a fuel in electric generating stations. (See, for example, EPA Region 4 comments on the Crystal River Plant, *viz.*, "FPC submitted to FDEP a request to allow the Crystal River facility to burn a blend of petroleum coke and coal in Units 1 & 2".)[31] Finally, EPA's "Profile of the Fossil Fuel Electric Power Generation Industry" (Report EPA/310-R-97-007, September 1997) notes: "The major types of fossil fuels used for electricity generation in the United States are coal, petroleum, gas. Other fossil fuels used include petroleum coke, refinery gas, coke oven gas, blast furnace gas, and liquified petroleum gas." (EPA 9/97, p. 39.)

In the instant application, the facility was modified in 1976-77 to add tertiary air to the kilns for the express purpose of buring some of the carbon to recover useful heat. As described at that time, "[t]he purpose of the alteration [addition of tertiary air] is to obtain a large reduction in natural gas usage by special air injection into the kiln. This air burns additional coke, replacing the heat requirement of the natural gas."[32] Thus, there can be no doubt that petroleum coke, as used in the Carbon Plant kilns, is a "fossil fuel" within the meaning of 40 C.F.R. Part 60 Subparts D and Da.

The District must revise the proposed Title V permit for the Plant to incorporate the applicable requirements of Part 60, subparts D and Da, and re-circulate the draft permit for public review.

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[30] Letter from Winston A. Smith, Director, Air, Pesticides & Toxics Management Division, EPA Region 4, Re: EPA's Review of Proposed Title V Permit R.D. Green Station, Sebree, Kentucky, Permit No. V-97-018, August 30, 1999.

[31] Letter from Winston A. Smith, Director, Air, Pesticides & Toxics Management Division, EPA Region 4, Re: EPA's Review of Proposed Title V Permit No. 0170004-004-AV, Florida Power Corporation Crystal River Plant, November 1, 1999.

[32] Bay Area Air Pollution Control District, Permit Application for Major Direct Source, Summary, January 26, 1976 (Exhibit 8).

III. THE PROPOSED TITLE V PERMIT DOES NOT INCLUDE ADEQUATE ENFORCEABILITY, MONITORING OR RECORD KEEPING REQUIREMENTS

All permits issued under Title V must include enforceable emission limitations and standards. (42 U.S.C. § 7661c(a).) Specifically, 40 C.F.R. § 70.6(a)(1) requires that each Title V permit include "those operational requirements and limitations that assure compliance with applicable requirements at the time of permit issuance." In addition, 40 C.F.R. § 70.6(b)(1) requires that:

> All terms and conditions in a part 70 permit, including any provisions designed to limit a source's potential to emit, are enforceable by the Administrator and citizens under the Act.

Many of the conditions in the proposed Permit do not meet these basic requirements. The conditions included to enforce applicable requirements either do not contain adequate monitoring or record keeping requirements, or fail to have any monitoring requirements at all.

The Permit, in many cases, places the onus the public to know which regulation is applicable and where in that regulation requirements are found. This is contrary to the very premise of Title V, namely that the source or a member of the public have one document that contains all the requirements a permit holder must meet.

The following are specific areas in the Proposed Permit where the Permit fails to meet the requirements of the CAA.

<u>GENERIC COMMENTS</u>:

1. The legal basis for the applicable requirements (conditions) does not always address the underlying requirement. In many cases the basis is only for a reporting requirement, which is the second part of the condition. In some cases the legal basis is for the underlying requirement (regulation or permit condition) when the condition may be monitoring or reporting related. The legal basis of conditions throughout the permit needs to be corrected to specify the legal basis for all specific requirements imposed by the permit conditions.

2. Throughout the permit there are references to "above conditions." To make these conditions enforceable as a practicable matter these references should all be replaced with the specific conditions being referenced.

3. Throughout the Permit there are limits specified and records that are required to be maintained, but no specific requirement to measure the parameter being recorded. For example, in Part VI. Condition #10438 condition 9 requires records on the monthly petroleum coke throughput per source. However, there is no requirement to measure throughput.

4. Throughout the proposed permit, conditions contain requirements such as "good working conditions," and "ensure proper operation." Without a specific definition for such terms, they are not enforceable as a practical matter.

Part III. GENERALLY APPLICABLE REQUIREMENTS

In the first paragraph, the Proposed Permit states that the permit holder shall comply with all applicable requirements. It goes on to state that these requirements apply in a general manner to the facility, and/or to sources exempt from District permit. It then states that the District has determined that these requirements (one is led to assume that the requirements referenced are those in Table III, but this is less than clear) will not be violated under normal routine operations, and that no additional periodic or reporting to demonstrate compliance is warranted. An analysis by the District to support this statement is not included in the Statement of Basis for granting the permit, or in the permit itself. No attempt whatsoever is made to define which generic emission points are subject to these requirements. Nowhere has the District demonstrated that the permit holder will not exceed these applicable requirements. Unless such a demonstration can be made, the requirements of 40 C.F.R. § 70.6 have not been met; the sources of emissions and the corresponding monitoring and reporting must be included in the permit. Otherwise the public has no assurance that these requirements are being met on an ongoing basis, if at all.

Part VI PERMIT CONDITIONS

Condition #136

Condition 5.a., 5,b, 5.d., and 5.g. appear to require that records of sulfur dioxide concentration and emission rates be maintain. It is

unclear as written what the difference is in these conditions. Are the measurements to be taken at different locations? Are they for different purposes, e.g. enforcement of different requirements? This could lead to difficulty in enforcing one or any of these conditions, or the corresponding regulatory requirements.

Condition 5.h. requires that records be keep of flow rates of combustion products. Nowhere in the permit is there a requirement that flow rate be measured. Also, there is no specification as to the location where the flow rate is to be measured. This alone makes the condition meaningless.

Condition 5.c. requires that records be maintained of natural gas burned on a monthly basis (therms/month). Similar conditions are contained in Conditions 13.a., and 13.c. We understand that Condition 5 refers to "above conditions" (which are not specified), and Condition 13.a. refers to limits in "part 12" (does this mean condition 12?). Both are nebulous references and require the same measurement provision. Furthermore, in both cases, these are requirements to maintain records of measurements that are not specifically required by the permit.

Condition 6 requires that the permit holder keep the baghouses in "good operating condition." This condition is not enforceable as a practical matter without a definition of "good operating condition."

Condition 8 requires that, within 3 months of final issuance, the permit holder to install a District approved manometer. Within 6 months the permit holder shall determine the pressure drop range for each baghouse. These pressure drop measurements are to be submitted to the District for inclusion in the permit. The basis for this condition is given at the end of this condition as "cumulative increase." Nowhere in the Statement of Basis or the Proposed Permit is this condition tied to an emission limit or process rate. Is the range to be submitted the range that the baghouse must be operating at to be in compliance? If so the condition must contain a requirement for such a range. This condition needs to be made specific as to the applicable requirement it is based on, and then made enforceable as a practical matter. Merely submitting any pressure drop range to the District

does not assure compliance unless specific requirements are included to establish the acceptable range.

Condition 9 requires that the pressure drop across the manometer be monitored at all times that the source is operating, and recorded once a week. The condition does not specify how the pressure is to be monitored, or what the permit holder must do if the monitoring determines that the pressure drop is outside the compliance range.

Condition 10 requires that visible emissions from S-1 and S-2 be monitored quarterly using either the District method, or EPA Method 9. The limit specified in the permit is that a person shall not emit from any source for a period or periods aggregating more than three minutes in any hour, a visible emission which is as dark or darker than No. 1 on the Ringelmann Chart. Using EPA Method 9 will not allow the measurement of compliance with this limit since Method 9 gives a 6-minute average opacity.

Condition #10438

Condition 4. See Comment on Condition #136 – 8

Condition 5. See Comment on Condition #136 – 9

Condition 6. See Comment on Condition #236 – 10

Condition 7 requires an annual inspection of the baghouse to ensure "proper operation." This condition is too vague to be meaningful or enforceable.

Condition 9 requires records on the monthly petroleum coke throughput per source. First, there is no requirement to measure throughput. Second, throughput "per source" is not definitive enough to be enforceable.

Condition # 10439

Condition 4. See Comment on Condition #136 – 8

Condition 5. See Comment on Condition #136 – 9

Condition 6. See Comment on Condition #136 – 10

Condition 7 requires an annual inspection of the baghouse to "ensure proper operation." This condition is too vague to be meaningful or enforceable.

Condition #17539

Condition 4. See Comment on Condition #136 – 8

Condition 4. See Comment on Condition #136 – 9

Condition 5. See Comment on Condition #136 – 10

Condition 6 requires an annual inspection of the baghouse to "ensure proper operation." This condition is too vague to be meaningful or enforceable.

Condition #17540

Condition 1 – See comment on Condition #136, condition 10.

Condition 3 requires records on the monthly petroleum coke throughput per source. First, there is no requirement to measure throughput. Secondly, throughput "per source" is not definitive enough to be enforceable.

The District should correct each of these enforceability problems and re-issue a draft Permit for public review.

IV. THE DISTRICT FAILED TO ALLOW FOR MEANINGFUL PUBLIC REVIEW ON THE PROPOSED PERMIT

40 C.F.R. § 70.7(a)(1) states that:

> A permit ... may be issued only if all of the following condition [sic] have been met: ... (ii) ... the permitting authority has complied with the requirements for public participation under paragraph (h) of this section.

Paragraph (h) of section 70.7 requires that:

> [A]ll permit proceedings, including initial permit issuance, ... *shall provide* adequate procedures for public notice.... These procedures *shall include* the following:
>
> (2) The notice shall identify ... the name, address, and telephone number of a person from whom interested persons may obtain additional information, including ... *all relevant supporting materials, ... and all other materials available to the permitting authority that are relevant to the permit decision....*

The District failed to comply with these requirements by failing to provide adequate public access to the Carbon Plant's NSR permit files during the public comment period.

The underlying NSR permit files are unquestionably "relevant supporting materials" and materials "relevant to the permit decision." As explained above, the explicit purpose of a Title V permit is to incorporate all federally applicable requirements for a source into a single permit. It is virtually impossible to satisfy this purpose without reviewing a facility's underlying permit files to ensure that (1) all applicable requirements from a facility's existing NSR permits have been included, and (2) all applicable requirements that are *not* identified in a facility's existing NSR permits have been included. As explained above, neither of these requirements was satisfied here. However, we could not have made this determination without access to the Plant's NSR permit files.

We requested access to the Carbon Plant's NSR permit files as soon as we received public notice of the draft Title V Permit. (*See* Letter from Sky Stanfield, Adams Broadwell Joseph & Cardozo, to BAAQMD (March 29, 2002).) We were

informed that the documents would not be available for our review until the Applicant completed its own review of the files to determine whether any materials could be marked confidential, and that that process would likely take a minimum of fourteen days, but could take much longer.[33] Consequently, we requested an extension of the 30-day public comment period from the person identified in the District's public notice (Mr. Donald Van Buren), from the District's Title V permitting coordinator (Ms. Brenda Cabral) and from the District's acting General Counsel (Brian Bunger), explaining in each case the basis for our request. Our extension request was denied.

The District finally provided us access to the requested files on April 18, 2002, two business days before the comment deadline. Two business days is not adequate time to review a voluminous and complex set of permitting files, such as the files for the Carbon Plant. Moreover, *it was purely happenstance* that we received access to the requested files before the close of the public comment on the proposed Permit. (*See* note 33.) This approach does not comply with EPA's directive to provide interested persons with "all relevant supporting materials, ... and all other materials available to the permitting authority that are relevant to the permit decision" during the comment period. (40 C.F.R. § 70.7(h).)

The District has informed us that it does not believe that the underlying NSR permit files for a facility are "relevant" to the Title V review. (Telephone call between Katherine Poole and Brian Bunger (April 17, 2002).) This position is simply indefensible given the purpose of the Title V program and the required content of a Title V permit. In essence, this position forces the public to rely on District personnel to incorporate all applicable requirements – a position that precludes meaningful public review and comment. As demonstrated by these and other comments on draft Title V permits, the public may have very different views of "applicable requirements" from District personnel. In at least one case, public review of a facility's NSR permit files has identified applicable NSR requirements that were *not* recognized by District personnel, and led the District to impose the overlooked requirements and significantly modify its proposed Title V permit. (*See* Letter from Katherine S. Poole to Robert T. Hull re the Gaylord Container

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[33] We were recently informed by the District that this 14-day review period is actually 14 *business days*, and that the Applicant is only required to make an appointment to view the materials within that period, not actually conduct the review. (Telephone call between Rochelle Walker, BAAQMD, and Katherine Poole, Adams Broadwell Joseph & Cardozo (April 15, 2002).) This means that there is no enforceable time period within which the records have to be made available.

Corporation Draft Title V Permit (July 27, 2000); Letter from William De Boisblanc, BAAQMD, to Steve Branoff, U.S. EPA (Dec. 13, 2000).) That comment and subsequent correction would not have occurred without access to the facility's underlying NSR permit files.

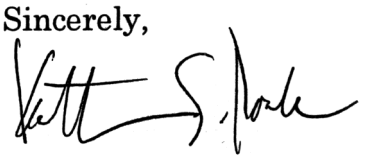
The District should modify its public review process to ensure that the public has access to a facility's NSR permit files during the comment period on the facility's draft Title V permit. The District could easily provide this access by simply informing affected facilities that they need to conduct their confidentiality review of the District's files *before* the public comment period starts. This review could occur in tandem with the facility's review of the administrative draft Title V permit, which occurs before the draft permit is released for public review. All of the relevant files (including the underlying NSR permit files) could then be available to the public for the entire public review period at the District's Title V repository.

V. CONCLUSION

The District may not issue a Title V permit until it complies with all of the requirements of 40 C.F.R. Part 70, including public participation requirements. (40 C.F.R. § 70.7(a)(1)(iv).) The proposed Permit for the Carbon Plant does not comply with those requirements. The District should correct the deficiencies described above and re-issue an amended draft Permit for public review.

Please call us with any questions about these comments.

Sincerely,



Katherine S. Poole

KSP:bh
Cc: David Wampler, EPA Region IX
Larry Blevins, Local 342
Mike Yarbrough, Local 302
Fred Fields, Local 549

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