

**RULE 67.10
KELP PROCESSING AND BIO-POLYMER
MANUFACTURING OPERATIONS**

WORKSHOP REPORT

A workshop notice was mailed to the one company involved in kelp processing and bio-polymer manufacturing operations in San Diego County, the U.S. Environmental Protection Agency (EPA), the California Air Resources Board (ARB), and other interested parties. The workshop was held on December 11, 1990. Additional meetings and discussions, subsequent to the workshop, have also been held. Written comments were also received. The comments and District responses are as follows:

WORKSHOP COMMENT

The proposed change in the control equipment efficiency requirement from 90% to 95% may preclude the company from possible future plant expansion due to lost emission credits even though the existing scrubbers for removal of isopropyl alcohol emissions are considered LAER.

DISTRICT RESPONSE

The additional emission reductions that will be realized by the amended Rule 67.10 will not be available to the company as offsets for future expansion. However, emission reductions in excess of that required by Rule 67.10 would be available to offset future expansion.

The Health and Safety Code requires the application of Best Available Retrofit Control Technology (BARCT) to reduce VOC emissions as expeditiously as possible in districts that are designated as having either "serious" or "severe" air pollution problems. San Diego County will be classified as either "serious" or "severe" for ozone. Therefore, the District is obligated to adopt rules which contain BARCT for VOC emissions.

Section 40406 of Health and Safety Code defines BARCT as "an emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts". The control efficiency (95%) specified in the amended Rule 67.10 has been achieved in the actual practice and is consistent with criteria defined in the guidance document for determining BARCT under the California Clean Air Act.

In addition to the BARCT requirements, the emission reductions that will be realized by the amended Rule 67.10 are needed to further efforts toward ozone attainment.

WORKSHOP COMMENT

Applicability provision (a)(2) should be removed from the rule since this type of activity does not occur in kelp or bio-polymer processing.

DISTRICT RESPONSE

The District agrees. The provision (a)(2) has been deleted.

WORKSHOP COMMENTS

The operations described in the Section (b) - Exemptions are the same from day to day. There is no purpose in performing daily record keeping.

DISTRICT RESPONSE

Daily recordkeeping is necessary to ensure the enforceability of Subsection (b)(1) since this subsection refers to a daily emission limit. For the remainder of the Section (b), recordkeeping requirements have been modified to eliminate unnecessary paperwork.

WORKSHOP COMMENT

Subsection (b)(3) refers to the distillation range of organic liquids. Aqueous solutions with low VOC concentrations used in some operations may have more than 10 weight percent evaporated at 150°C, but the distillate will contain only water.

DISTRICT RESPONSE

The intent of the rule was to exempt organic compounds with very low volatility. Therefore, Subsection (b)(3) has been modified to reflect this intent. It now refers to the normal boiling point of organic compounds.

WORKSHOP COMMENT

The new language added to Subsection (d)(2)(4), relating to an unrecorded leak, should be deleted because it is redundant.

DISTRICT RESPONSE

This language improves the enforceability of the rule. Similar language is contained in other District's rules. Therefore this language has been retained.

WORKSHOP COMMENT

Changing the VOC content in the definition of Fugitive Liquid Leak from 50% to 10% would force the redesign of the incorporators in Plant B. The emissions saved by this type of efforts are miniscule, and the cost per pound of emissions reduced would be very high.

DISTRICT RESPONSE

In most of the operations involving liquid streams, the change in definition of Fugitive Liquid Leak will bring VOC emission reductions at a small cost to the company. A cost analysis was performed by the District using data on the cost of modification of the incorporators and the EPA emission factors for liquid leaks from pump seals in synthetic organic chemical manufacturing industry. This analysis showed that the modification of incorporators would not be cost-effective. Therefore, the incorporators have been exempted from the requirements of Subsection (d)(2).

WORKSHOP COMMENT

The absence of daily records for operation and maintenance activities should only be considered a violation if daily records are not kept and the scrubber in question has been tested and found not to be operating at the specified removal efficiency.

DISTRICT RESPONSE

The District must ensure continuous compliance with the rule on each and every operating day of the facility. District inspectors cannot be present every day to verify compliance. Therefore, the daily recordkeeping is necessary. In addition, it is not practical to conduct a complete source test to determine control efficiency whenever records have not been kept. Accordingly, daily records are required, and failure to maintain such records will be a violation of the rule.

WORKSHOP COMMENT

There are chart recorders monitoring essential process parameters. Would such charts satisfy daily recordkeeping requirements?

DISTRICT RESPONSE

Yes, if all essential parameters to determine compliance are being monitored. Those key system operating parameters not being recorded by chart recorders must be checked and recorded manually at least daily.

WRITTEN COMMENT

Provisions should remain in the rule to allow for offsets or credits for VOC emissions. The language allowing the banking of emission reductions achieved beyond the regulated limits has been deleted from the proposed rule and should be reinstated.

DISTRICT RESPONSE

Emission banking is regulated by District Rules 26.0 through 26.10. These rules are applicable for any emission reductions achieved beyond requirements of applicable District rules. Emission reductions in excess of those required by Rule 67.10 are eligible for banking pursuant to Rules 26.0 through 26.10.

WRITTEN COMMENT

The proposed Subsection (d)(5)(ii) establishes reduction limits for VOC with a boiling point higher than 190°C. These limits are not based on technical knowledge of the current emissions or on evaluation of what type of additional emission control equipment may be cost-effective. The scope of emissions hasn't been quantified since the source test evaluation has not been completed by the District.

DISTRICT RESPONSE

A preliminary evaluation of the source test data for the control equipment in question has shown that the 80% emission control requirement established by the rule can be achieved. Further study

of the processes at the facility and test results will be conducted in order to determine whether the current emission reduction systems should be capable of achieving the specified 80% requirement and, in the future, whether a higher level of emissions control is technically feasible and appropriate. If appropriate, such higher level of control will be required at a future date.

POST-WORKSHOP COMMENT

The existing emission control equipment that is subject to Subsection (d)(5)(i) was capable of only 96% efficiency when tested for the District. There is not a sufficient margin of safety between this performance level and the proposed 95% control requirement. The requirement should be lowered to provide for an adequate margin of safety.

DISTRICT RESPONSE

The referenced source testing was likely done during worst case conditions. Accordingly, system control efficiency during other operating conditions should be higher than 96%. Moreover, the design of the system, including bypassing of uncontrolled emissions, should allow for some adjustments, if necessary, to ensure compliance with the 95% requirement. Nevertheless, the District will again review the test data and, if appropriate, recommend changes to the requirement.

EPA COMMENT

What method will be used to quantify the VOC emissions occurring during the transfer of materials containing VOC into and out of a drier specified in Subsection (d)(4)? Without a test method or procedure for determining these emissions this provision of the rule would be unenforceable.

DISTRICT RESPONSE

The proposed rule has been modified to include the EPA Guideline for Developing of Capture Efficiency Protocols to quantify fugitive emissions.

EPA COMMENT

The word "and" should be added to the end of Subsection (b)(2).

DISTRICT RESPONSE

The word "and" has been added.

EPA COMMENT

Subsection (d)(1) needs some editorial changes to clarify it. Also, there is no need to specify P/V valve pressure settings for tanks greater than 50,000 gallons since they are already specified for tanks with capacities greater than 20,000 gallons.

DISTRICT RESPONSE

Subsection (d)(1) has been changed as suggested. The settings of pressure-vacuum relief valves for tanks with capacities greater than 20,000 gallons and those with capacities greater than 50,000 gallons are different, and, therefore, do need to be specified for each tank size

EPA COMMENT

The reference in the second paragraph of Section (f) to Subsection (b)(4) should be changed to (d)(4).

DISTRICT RESPONSE

This reference has been corrected.

ARB COMMENT

The exemption of low volatility liquids as described in Subsection (b)(3) can result in increased emissions of volatile organic compounds and therefore is a weakening of the rule.

DISTRICT RESPONSE

This provision is, in fact, a strengthening of the existing rule. Low volatility liquids were exempt in existing Rule 67.10 according to the VOC definition in Subsection (c)(2). This definition exempted all volatile compounds that, in their pure state, have an absolute vapor pressure less than 25 mm Hg at 20°C.

The amended rule exempts only organic liquids with the initial boiling point of 190°C or higher. Most liquids with such boiling points will have vapor pressures at 20°C of less than 1 mm Hg. Thus, the change makes more compounds under the revised VOC definition subject to the rule.

The estimated amount of VOC emissions exempt under the existing rule is approximately 126 tons/year (98% of these emissions were VOC's with the boiling point of 130°C). The amount of emissions exempt under the amended rule will be an estimated 2.7 tons/year (propylene glycol only) which represent less than 0.5 percent of total VOC emissions from the affected facility.

ARB COMMENT

It is not apparent why the "Stationary Source" definition is needed. If it is kept in the rule it should be explained but not referenced to Rule 20.1

DISTRICT RESPONSE

The definition has been deleted.

ARB COMMENT

Subsection (d)(1). The rule does not apply to storage tanks which have a capacity less than or equal to 20,000 gallons. To improve the effectiveness of the rule, the tank size exemption should be reduced to 260 gallons.

DISTRICT RESPONSE

The rule, in general, is applicable to all storage and in-process tanks at the affected facility. Subsection (d)(1) exempts only the above ground tanks smaller than 20,000 gallon size from the requirement for pressure-vacuum relief valves requirement. At the one facility affected by this rule, there are three such tanks with a capacity of 7500 gallons each. The total amount of VOC emissions from these tanks is less than one pound per day.

ARB COMMENT

EPA Method 25 does not discriminate between the halogenated organic compounds exempted by the rule VOC definition, and other organic compounds defined as VOC's. A supplementary test method such as EPA Test Method 18 or ARB Method 422 should be specified.

DISTRICT RESPONSE

The affected facility does not use, produce or emit exempt compounds and there are no future plans to do so. Therefore, the specification of supplemental test methods is unnecessary.

ARB COMMENT

Subsections (d)(5)(i) and (d)(5)(ii) make reference to "process reactants". This term should be defined.

DISTRICT RESPONSE

"Process reactant" is a common term widely used in chemical engineering practice. It does not have any unique meaning in the rule and therefore does not need a separate definition.

ARB COMMENT

The rule should include the definitions for fugitive liquid leaks and fugitive vapor leaks similar to the ones used in Ventura County Rule 74.7 - Fugitive Emissions of Reactive Organic Compounds from Petroleum Refineries and Chemical Plants.

DISTRICT RESPONSE

There is no requirement in the rule for fugitive vapor leaks and therefore the definition is not needed. A fugitive liquid leak definition similar to Rule 74.7 of Ventura County cannot be used for help processing operations since, unlike refinery operations, they are not continuous but rather batch processes such as filtration and batch reactions. The transfer of products containing VOC's sometimes takes place not in continuous enclosed lines but through transfer tanks and other similar equipment.

ARB COMMENT

Subsection (d)(6) should be shortened to include the requirement that all equipment, devices and systems used in kelp processing and bio-polymer manufacturing operations are to be free of leaks.

DISTRICT RESPONSE

Subsection (d)(6) was specifically worded to exclude operations such as filtration using filter presses since otherwise they could be considered sources of liquid leaks. This is not the intent.

ARB COMMENT

The rule should specify the schedules and requirements for inspection and maintenance.

DISTRICT RESPONSE

Subsection (d)(7)(iii) specifies that an operation and maintenance program shall be submitted for approval to the APCO. It also specifies that such program includes inspection schedules, ongoing maintenance steps and proposed daily recordkeeping practices regarding key operating parameters of control systems. Such a program will satisfy the concern expressed.

ARB COMMENT

Subsection (d)(3) requires that in-process tanks be covered. To clarify this provision, the District should include a definition in the rule for "in-process tanks".

DISTRICT RESPONSE

The term "in-process" tank is self-explanatory and does not need a definition.

COMMENT

Rule 67.10 was originally developed with a specific understanding of process operations and typical process cycle times. If an inappropriately short period of time is used for testing, non-compliance could be indicated. However, if the testing time were extended compliance would be demonstrated. There is concern that if an inappropriately shorter period than the specified 16 hours is used for testing, a finding of non-compliance could result. Therefore, testing should be carried out at least 16 hours if the District believes a non-compliance problem exists. However, because of cost considerations, the District should be able to establish compliance using a test period of less than 16 hours.

DISTRICT RESPONSE

The District agrees there could be a problem if an inappropriately short test period is used. Rule 67.10 has been revised as suggested. However, if enforcement problems result from this change, it is the District's intent to propose additional revisions to Rule 67.10 to correct the problems.