ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
BUREAU OF AIR

DIVISION of AIR POLLUTION CONTROL

PERMIT SECTION

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Responsiveness Summary for the CAAPP Permit Application for Solutia, Inc. W. G. Krummrich Plant Sauget, IL

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INTRODUCTION

Solutia, Inc. has applied to the Illinois Environmental Protection Agency (Illinois EPA) for a Clean Air Act Permit Program (CAAPP) permit for its Krummrich Plant, located in Sauget, Illinois. The Krummrich plant is a chemical manufacturing operation with both organic chemical and inorganic chemicals products. Three main products are produced with two of the process having variations of the general class of product. The three main products are Santoflex, phosphorus pentasulfide, and ACL.

This draft permit is addressed to Solutia, Inc. but Solutia is the "operator" of the equipment. Each of the three main processes is owned but a separate corporation. These owners are listed in Section 1.0 of the permit.

This Responsiveness Summary has been prepared by the Illinois EPA as part of the CAAPP application for this source. A draft permit for this source was previously prepared and went to Public Notice and a public hearing was held on July 19, 2005. A number of comments were received from environmental groups and the USEPA. Since that date two of the principal processes at the site have been shut down. The Illinois EPA thought it best to remove those processes from the permit and send another draft permit to public notice. Those processes were monochlorobenzene and dichlorobenzene but the large number of types of operations within them was divided into 14 sections of the permit (7.1 to 7.14). Also, in the original draft permit several section numbers were classified as reserved and contained no information (7.15 to 7.27).

The remaining parts in Section 7 have been renumbered and some have been combined. Here is a list of the old and new numbers. This table is provided for ease of going from a comment made on the original draft permit to locating it in this revised draft.

Old Section Number(s)	New Section Number	Process
7.28	7.1	Santoflex Process
7.29	7.2	Santoflex Process Storage Tanks
7.30, 7.31, 7.32	7.3	P2S5 Process (3 sections combined)
7.33	7.4	ACL Process

This Responsiveness Summary explains the Illinois EPA's response to that initial public notice. The revised draft addresses many of the issues raised by the public, environmental organizations and the Solutia during the original notice period/public hearing. Also, since the original notice the Illinois EPA has modified the "model" used for all CAAPP permits. This revised permit uses the new model. The new model is not radically different from the previous model.

The shutdown chlorobenzene processes were subject to the HON NESHAP and none of the other processes are subject to that rule. The HON rule named specific final products that the rule applied to. However, two of the remaining processes are subject to the "MON", short for Miscellaneous Organic NESHAP. The MON does not name specific products but applies to processes with any of several Standard Industrial Classification (SIC) codes that use HAP materials

or the final product is a HAP. The requirements are similar to the HON. Although the MON is a published rule a source is not required to comply with that rule until May 10, 2008. The draft permit has been written citing the rule as applicable but that compliance is not required until May 10, 2008. It is expected that the final permit will be issued prior to that date and that same format will be included in the final permit. If the final permit issuance is delayed until after May 10, 2008 then the "until" or "after" language will be deleted and just the rule itself cited.

Solutia has been granted a construction permit to reduce HAP emissions so as to be able to comply with the MACT by May 10, 2008.

BACKGROUND

Clean Air Act Permit Program (CAAPP)

The Clean Air Act Permit Program (CAAPP) is Illinois' federally approved operating permit program for major stationary sources of emissions and other sources, as required by Title V of the Clean Air Act. Permits issued under the CAAPP are known as "CAAPP permits." Major stationary and other sources covered by Title V of the Clean Air Act are required to apply for and obtain a CAAPP permit. CAAPP permits must include emissions limitations and standards and other requirements under state and federal environmental laws and regulations and related provisions to assure compliance with applicable requirements. CAAPP permits generally do not impose new substantive requirements for control of emissions. Rather, these permits provide for, among other things, testing, monitoring, recordkeeping, and reporting (a portion of which may be 'new' requirements) to assure compliance with existing state and federal emission control requirements. The conditions of CAAPP permits are enforceable by the public, as well as by the state and federal government.

Public Participation

As noted above this permit previously went to public notice and a public hearing was held on July 19, 2005. The revised permit address many of the issues raised at that time and this Responsive Summary explains the reasoning for some of those changes.

If a comment on the original draft permit related only to the shutdown processes then no response is given here. If the comment had general applicability to the entire site or could apply to more than one of the remaining processes then a response is given.

USEPA Review

The USEPA reviewed the original draft that went for public notice and a hearing. Their comments were addressed with those by the public in the response to Comments.

GENERAL DESCRIPTION OF THE PLANT AND THE PROPOSED PERMIT

At the Krummrich plant three main types of products are manufactured. At one time the plant had several coal-fired boilers that produced steam for the chemical processes. Solutia has now outsourced the steam production to a separate company called Environmental Management Corp. (EMC). Although the emissions from EMC would normally not qualify them as a major source, since Solutia is there only client for steam the two sources are co-located sources and each is required to have CAAPP permit(s). EMC has chosen to obtain its own CAAPP permit. In 2006 emissions of NO_x, the highest pollutant emitted by EMC, were less than 20 tons. In the questions/comments raised during or following the hearing a request was made that "Gateway WGK" be as single source with the Krummrich Plant. The name has changed but the action to consider them one source has been done.

In 2004 Solutia applied for a construction permit (No. 04060058) to build its own boilers. A question arose as to whether the netting done for that construction perm it was attempting to use emissions from the previously shutdown Solutia boilers that EMC had used. The point is moot as the new Solutia boilers were never built and the construction permit has expired.

The highest emissions from the Solutia operations in 2006 were VOM at 39 tons. Normally this would not require a CAAPP permit but the site is major for HAP emissions.

Santoflex Process

Santoflex is a trade name for an organic chemical used as a rubber additive. The process is subject to the MON. There are two "lines" for manufacturing the material. The processes are batch operations and some of the state and federal rules are excluded from applicability because the rules only apply to continuous processes and not batch processes. By making minor changes in the raw materials there can be several types of Santoflex produced. The main process lines are covered in Section 7.1 of the CAAPP permit but three storage tanks are covered in Section 7.2.

Phosphorus Pentasulfide Process

This is an inorganic chemical process. The raw materials and the product are all solids and emitted in PM form. Typically there are only minor amounts of visible emissions. There is one HAP material simply referred to as "phosphorus compounds". However, the USEPA is not even studying the phosphorus pentasulfide manufacturing as a possible NESHAP MACT. Phosphorus compounds is probably intended to cover some pesticides that contain phosphorus and not P2S5 manufacturing.

ACL Process

This process is subject to the MON not for VOM material that is a HAP but from chlorine emissions, one of the raw materials that is a HAP. The product is a solid and not a VOM or HAP.

RESPONSE TO COMMENTS

Insignificant Activities

Comments were received regarding the requirements to which “insignificant activities” are subject. The CAAPP permit addresses these units in one distinct section. This is contrasted with emission units that are not insignificant; these are addressed in unit-specific sections of the CAAPP permit. Notwithstanding, “ insignificant “ emission units and “significant” emission units alike are subject to unit specific type conditions as well as general and standard conditions as more specifically set forth in the CAAPP permit.

Two examples of requirements that frequently apply to insignificant activities are as follows: 1) Small storage tanks of VOM that store a material with a vapor pressure over 2.5 psia are required to have a submerged loading pipe; 2) PM emitting units are still subject to 35 IAC 212 Subpart L.

One comment was that the permit did not give an explanation of how activities were determined to be insignificant. The Illinois EPA generally had to rely upon the information supplied by the applicant but did use engineering judgment in approving the classification as insignificant. For instance, if the vapor pressure of the material stored in a tank is very low the insignificant status may not be questioned but a calculation using storage tank emission factors may be required for higher vapor pressure materials.

The Illinois EPA inspectors who visit the site also have the authority to question the claim of insignificance when they visit the site. For instance, if a unit appeared to be emitting visible emissions of dust they could request that a test be performed to verify a low emission rate that enabled the unit to be claimed as insignificant.

Note that some units are insignificant based on a low hourly rate of emissions, but possibly continuously being emitted, while other units may be based on a higher hourly rate but infrequent use such as filling a silo with a powdered material for one hour once per week or per month.

Nonapplicability Determinations

Several of the comments had to do with the chlorobenzene processes that are now shutdown.

Another comment stated that a unit (a tank) was not subject to a SIP requirement because the affected tank is included within the category specified by 35 IAC 219 Subpart B. The comment was then made that Subpart B has many different sections and the commenter could not determine which was appropriate. In reality, as long as the tank is regulated by Subpart B then the other SIP requirement does not apply. It is irrelevant which section in Subpart B is appropriate.

Another comment questioned the nonapplicability determination for the CAM rule. Specific determinations have been removed as this is an initial CAAPP permit which is not required to address CAM.

Notifications

One comment was that the mayor of E. St. Louis was not informed of the hearing. The comment was not made by the mayor as he was there.

The Illinois EPA notifies various local officials and elected representatives about public notices and when a public hearing is scheduled.

Emission Reductions After Shutdowns

One of the comments was that if Solutia is deleting much of the production capacity (i.e. the chlorobenzene processes) is there a corresponding reduction in emissions.

Prior to the shutdown of the chlorobenzene processes the permit fee for Solutia was based on 390.55 tons of VOM. The current permit fee is only for 74.16 tons of VOM (which normally would make the source non major and not require a Title V permit except for the HAP emissions). Since the chlorobenzene processes also used process steam there have probably been reductions in NOx and CO emissions from the fuel combustion to produce the steam. Those reductions are not necessarily reflected in this permit as the reductions would occur from the EMC boilers previously discussed. Those would be actual reductions and the fees, which are based on allowable (boiler capacity) may not be reduced.

Hazardous Air Pollutants (HAP) Limits

The draft permit states that source-wide emission limits for HAPs are not set. Explain.

The statement simply classifies the source as major for HAPs. Most of the HAPs are also VOM and thus included in the VOM limit of 74.16 tons/year. The limit for HAPs that are not VOM are included on the fee form as HAPs not included in VOM or PM. This limit is 11.0 tons/year. This is mostly chlorine form the ACL process.

Note that the fee amount is a gross amount for the year. When the chlorobenzene processes were operating the processes were required to meet the HON (Hazardous Organic NESHAP) limits and the Santoflex and ACL processes will be required to comply with Miscellaneous Organic NESHAP (MON) beginning in May 2008 although many of the units already comply with those limits. The MON requires short term limits such as 98% efficient control equipment, leak monitoring etc.

Emergency Response Plan

One commenter asked why there isn’t an Emergency Response Plan to protect the people.

Solutia is required to have such a plan. It is referred to as a Risk Management Plan. See Condition 5.3.5.

Section 6.0 of the Permit

The original draft permit simply said this section was not applicable to this permit. The Illinois EPA now titles this section “Conditions for Emission Control Programs”. Examples are the ERMS program in the Chicago area and NOx Control Programs for owners of very large fuel combustion units. None of those programs apply to the Solutia operations.

Use of the Term “No Person”

The USEPA recommended that the term, “No person shall cause or allow…” be changed to, “The Permittee shall not cause or allow…”. This change has been done in Section 7.

Other USEPA Comments

Most of the USEPA comments concerned the chlorobenzene processes that have been shutdown. In the new draft the Illinois EPA reviewed those comments to see if they had more universal applicability to the remaining processes and if they did appropriate changes were made to address the concerns.

Environmental Justice

Notwithstanding the uncertain relation between EJ issues and Title V permitting, during the permitting of this chemical plant, the Illinois EPA has responded to the issue of Environmental Justice in several ways. As part of the initial public comment period, the Illinois EPA held a public hearing on the draft permit for this plant to facilitate input into the permitting process by the public.

In response to public comments, the Illinois EPA considered the impacts of the plant on the local community to determine whether this plant might be contributing to disparate impacts on minority or low-income communities, as relevant for a formal evaluation of environmental justice. This review did not identify impacts from the chemical plant on local neighborhoods that were significantly higher than VOM impacts on areas further away, so as to be disparate from a geographical perspective. VOM is a precursor to the formation of ozone that is considered to be a “regional” pollutant, that is, the effect is spread over a wide area and not localized to where the precursor is emitted. This suggests a general concern for contribution to ozone air quality, but not a particular concern as related to environmental justice. For criteria air pollutants other than VOM, this plant generally contribute to air quality in the Metro East metropolitan area and the region, but disparate impacts on the local neighborhood should not be expected.

The Illinois EPA also reviewed the provisions of the permit for this plant to identify possible enhancements to the provisions for control of VOM emissions from the chemical plant. The extent of such potential enhancements was limited, because, as already explained, CAAPP permits are intended to address existing regulations and requirements for control of emissions, not to create new control requirements. Thus this permit should not and does not set limits for VOM emissions that are lower than the limits that apply under existing regulations.

It should also be noted that since this permit originally went to public

notice that one of the major production processes at the site has been shut down. Reported emissions of VOM from the site have decreased from over 100 tons/yr before that shutdown to about 40 tons/yr in 2006. This chemical plant is also subject to a National Emission Standard for Hazardous Air Pollutants (NESHAP) but the effective date of the rule is May 2008. Solutia has been granted a construction permit to install a pollution control device to reduce emissions of HAPs and since the HAPs are also VOM, VOM emissions will also be reduced when this program is implemented.

Concern has been expressed for the effect of emissions from the chemical plant on public health. As such, the suggestion has been made that the Illinois EPA should limit emissions to levels below those that are required by current regulations and force the source to install additional control equipment. As stated elsewhere, the purpose of the CAAPP is to assure compliance with “applicable requirements.” The CAAPP does not authorize a state to impose substantive new requirements. This is particularly true where there exists no basis to do so. The application and comments for this permit lacks the information that could form the basis for the requested measures. What commenters seek are newer, more stringent regulations. This is simply not something that would be accomplished through permitting, much less CAAPP permitting. Rather, this is something that must be accomplished by adoption of new laws or regulations, on either the state or national level, as is occurring.