R&D Stakeholders' Meeting Summary

November 18, 1997

Organic Chemicals Group
Emissions Standards Division
Office of Air Quality Planning and Standards
U.S. Environmental Protection Agency
Durham, North Carolina

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1.0 EXECUTIVE SUMMARY

The U.S. Environmental Protection Agency (EPA) Office of Air Quality Planning and Standards (OAQPS) conducted a Research and Development (R&D) Stakeholders' Meeting on November 18, 1997 in Durham, North Carolina. The purpose of the meeting was to discuss issues related to the possible listing of R&D as a category of sources of Hazardous Air Pollutants (HAP) under Section 112 of the Clean Air Act (CAA). The Agency is currently gathering information to determine whether such a listing should occur. Forty-seven stakeholders representing industry, academic institutions, State agencies, government facilities, and private research organizations attended the meeting.

After discussions of EPA and stakeholder objectives, information needs, listing options, potential to emit (PTE), and Title V issues, meeting attendees agreed that additional information gathering is necessary before the EPA can determine whether an R&D listing should occur. The information gathering will be conducted by a subset of the stakeholder group called the "Wise Council." The Wise Council will be a representative group of stakeholders, comprising individuals from various segments of the industry, academia, regulators, and government facilities. Appendix A includes the list of the Wise Council members. Action Items for the Wise Council were developed. These Action Items represent the next steps in the listing decision process and are included in Table 1-1. The Wise Council's work will be focused exclusively on information needs. The Wise Council was not charged with, nor is it expected to, provide advice or recommendations to the EPA regarding the listing decision or achieve a consensus position regarding the listing decision.

This report includes a summary of the meeting. It is organized into the following sections, which reflect segments of the meeting agenda.

2.0 EPA and Stakeholder Objectives
3.0 Information Needs
4.0 Listing Options
5.0 Potential to Emit
6.0 Title V Issues

Appendix B contains the meeting agenda. Meeting overheads are included in Appendix C. Appendix D is a draft R&D Facility Questionnaire. Appendix E contains a list of meeting attendees.

TABLE 1-1: ACTION ITEMS

No.	Action Item
1	The EPA will contact trade associations concerning R&D. One of these will be the Agricultural Crop Protection Association.
2	The EPA will consider whether a subset of the most toxic hazardous air pollutants (HAP) could be used as a surrogate for the 188 HAP in any regulatory development that may occur.
3	A Wise Council comprising an ad hoc information sharing group will be formed. The Wise Council will include individuals representing the following stakeholder groups. EPA (Keith Barnett) Academic Pharmaceutical Chemical Government Facilities Electronics Petroleum State/Local Regulators Biotechnology Food Processing Medical Private Contract Research Metals Combustion Engineering
4	Stakeholders will submit names of "Wise People" to serve on the Wise Council to Keith Barnett no later than 11-24-97.
5	The Wise Council will hold a conference call in early December. Interim dates for milestones will be established on the conference call. The Wise Council will move forward as expeditiously as possible to accomplish their tasks.
6	No later than March 1998, the Wise Council will have accomplished the following tasks: • Develop a clearer sense of what is meant by R&D, including definitions of labs, pilot plants, and other types of R&D. • Develop a clearer sense of the information needed to make a listing decision. • Develop an information collection mechanism. • Collect and review existing information on R&D. The Wise Council will also consider other regulations [OSHA, 112(r), etc.] that impact R&D. The Wise Council will also review potential to emit (PTE) discussions in other forums.
7	The EPA will add "work practice standards" that reduce air pollution to its list of control strategies in use in R&D.
8	The EPA will E-mail meeting overheads to participants.
9	The EPA will prepare a summary of the R&D meeting for distribution to participants.

2.0 EPA and STAKEHOLDER OBJECTIVES

The meeting opened with a presentation by Bruce Jordan, Director of the EPA's Emissions Standards Division (ESD) within the OAQPS. The ESD has the responsibility for recommending whether R&D should be listed as a category of major sources of HAP. Following Mr. Jordan's presentation, meeting participants responded with questions. This section summarizes Mr. Jordan's presentation, stakeholder questions and comments, and the Agency's responses.

2.1 Comments by Bruce Jordan

Mr. Jordan indicated that the EPA is aware of several R&D facilities that have actual emissions that exceed the statutory HAP major source thresholds (i.e., "stand alone major sources")[1]. In addition, the Agency is also aware that R&D sources are collocated with manufacturing sites that are major sources. Therefore, the EPA cannot postpone the process of deciding whether to list R&D as a category of major sources of HAP.

Mr. Jordan gave an overview of the EPA's information needs. The Agency does not have a clear picture of emissions from the R&D industry. The EPA is not interested in regulating *de minimis* amounts of emissions. However, the Agency does not have solid information on the nature of the R&D industry and its emissions. Following are questions concerning the EPA's information needs.

- What are the levels of emissions from laboratories?
- What are emissions from R&D at collocated manufacturing sites?
- Are the R&D facilities ever used for manufacturing?
- Is there a big difference among the emission levels at collocated R&D facilities? Do some have emissions that are close to the major source level, while others have very small emission levels?
- Which and how many stand alone sources have actual emissions greater than 10 or 25 tons per year (tpy)?
- Where are the pilot plants and what are their emission levels?

Mr. Jordan explained that when the EPA identifies a category of major sources of HAP, the normal steps in the National Emission Standards for Hazardous Air Pollutants (NESHAP) regulatory process are to list the source category, and then to ask for information. Listing a source category does not necessarily mean that the entire industry will be regulated. Due to the uncertainties concerning R&D emissions, however, the EPA prefers to obtain more information before determining whether to list. Mr. Jordan emphasized that due to the existence of the stand alone major sources, the EPA will **only** be able to postpone the listing process if progress in obtaining necessary information can be shown.

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[1] In this discussion, major source refers to major source of HAP emissions. It does not mean major source of criteria pollutants.

According to Mr. Jordan, the EPA recognizes the need for flexibility in R&D and intends to make every effort to ensure any regulations that may ultimately be promulgated do not unnecessarily restrict that flexibility. To further this goal, the EPA intends to consider strategies other than add-on controls and, if appropiate, establish exemptions for small sources with minimal emissions. Another EPA goal is stakeholder involvement in the regulatory process. Mr. Jordan emphasized that working with stakeholders is very important to the EPA.

2.2 Stakeholder Questions and Comments

This section includes the stakeholder comments and questions following Mr. Jordan's presentation. Information needs, the regulatory process, emissions information, and collocation issues were discussed. Other comments are also noted.

2.2.1 Information Needs

Ms. Lee-Jeffs and Mr. Reinhardt inquired concerning the information that the EPA had received in the comment letters. Ms. Lee-Jeffs further questioned whether the plant trips and other data gathering efforts had provided input that increased the EPA's comfort level that emissions from R&D are low. Mr. Barnett replied that the comment letters provided some data concerning laboratory emissions, but very little concerning how the emissions were derived. There was also little information concerning pilot plants. Mr. Barnett also explained that the plant trips provided helpful information concerning pilot plants in the chemical and pharmaceutical industries. However, pilot plants in other industries may be different. Mr. Barnett indicated that there is not a lot of readily available information concerning R&D, and that much of the available information may not accurately reflect actual emissions. For example, many sources have operating permits with emission limits that are well above their actual emissions. The emission limit in the permit may also be in the emissions inventory as actual emissions. For these reasons, the EPA needs a lot of additional information to make an informed decision concerning listing.

Mr. Lee and Mr. Wehrum indicated their willingness to provide information to the EPA. Ms. Murphee and Mr. Roundtree advocated that all stakeholders work with the EPA, which will result in a regulatory process that is more likely to meet their needs. Ms. Murphee further explained that information provided to the EPA should be very specific, and broken down in the format that the Agency requests. Giving correct and complete information will result in a better rule sooner, she stated. Ms. Siegler questioned what information would need to be provided to convince the EPA not to list R&D. She was uncertain what additional information the petroleum industry could provide.

Ms. Dudley questioned whether Superfund Act Reauthorization Authority (SARA) 313 data from all R&D facilities would be useful for the R&D listing decision. Mr. Jordan replied that SARA 313 does not cover all HAP, and that the EPA would need information concerning emissions of all HAP to determine whether a listing was required.

2.2.2 Regulatory Process

Mr. Cherchiaro questioned why the EPA did not wait until after all the NESHAP were promulgated to determine whether R&D should be listed. Mr. Jordan explained that the process of determining whether to list R&D should actually have been initiated in the early 1990's after the passage of the 1990 Amendments to the CAA. An internal audit conducted by the EPA's Inspector General has determined that the Agency had not yet addressed the statutory requirements in CAA 112(c)(7) concerning R&D. Regardless of the Inspector General's report, the Agency will have to decide whether to list R&D, and if the listing occurs, the regulatory process should be finished by the year 2000. Mr. Jordan emphasized that the EPA does not have the luxury of waiting to determine whether to list R&D. Mr. Vetter explained that if the information gathering process is proceeding in a meaningful way, the Agency will have more latitude to postpone the listing decision in order to evaluate the information being collected.

Ms. Broome stated that the EPA should be aware that not all R&D can be characterized as either pilot plants or bench scale laboratories. She pointed out that there is a lot of combustion research, some of which is conducted in universities. General Electric has 12 divisions, comprising 35 source categories, that conduct research. Research in each of these divisions is different, and the EPA should be sure to address the variety of research being conducted in any regulatory development.

Mr. Prashan and Mr. Wehrum addressed regulation of pilot plants. Mr. Prashan explained that pilot plants in the automobile industry contained full-scale equipment, but did not operate like manufacturing facilities do. The full-scale equipment is necessary to conduct research on automobiles, but they do not make a lot of parts or operate continuously. Mr. Wehrum agreed that pilot plants should be treated as R&D, as they do not function as manufacturing does, even when full-scale equipment is used. He emphasized that pilot plants really are R&D and deserve separate treatment from manufacturing.

Mr. Lee urged the EPA not to develop a regulation that would require extensive effort (e.g., recordkeeping and reporting) to prove that a facility is not subject.

Mr. Wehrum lauded EPA's practical approach to listing, expressing appreciation for the Agency's desire to collect information and list R&D only if the data indicate that R&D emissions are significant.

2.2.3 Emissions Information

Ms. Hoenke provided information concerning Chevron's R&D facilities and their emissions. She stated that Chevron had 100 pilot plants, 60 of which use HAP. Actual emissions from the 60 pilot plants in 1996 were 600 lbs of volatile organic compounds (VOC), including 400 lbs of 18 chemicals that are HAP. Some of the pilot plants are controlled; others are not. Chevron also has 300 bench scale laboratories.

Mr. Bernson emphasized that Lucent had quantified emissions from their R&D operations, but that these only presented a "snapshot" of emissions. The data do not guarantee that emissions were always at this level. Emissions could be lower at times, he stated.

Mr. Bernson, Ms. Broome, Mr. McGaw, and Mr. Wehrum stated that emissions from R&D sources are low. Mr. Bernson, Mr. Hardiman, Mr. McGaw, Mr. Prashan, and Mr. Wehrum reported the need for flexibility in R&D, and requested that any regulatory development consider this need. Ms. Dudley and Mr. Prashan emphasized the variety and change in R&D operations. Mr. McGaw indicated that there was a lot of diversity in academic laboratories, which range from undergraduate teaching labs to highly specialized labs for conducting contract research. He felt it unlikely that one regulation could adequately address the variety found in these labs while still offering the needed flexibility. Mr. Lee agreed with Mr. McGaw that a "one size fits all" regulation would not work.

2.2.4 Collocation Issues

Mr. Cherchiaro, Mr. Hmiel, Mr. Lutz, and Mr. Wehrum addressed collocation issues. Mr. Cherchiaro and Mr. Hmiel wanted to know whether a minor R&D source could bring the collocated manufacturing into the NESHAP applicability. Mr. Barnett explained that if the emissions from both together exceed 10 tons per year of any single HAP or 25 tons per year of aggregated HAP, the plantsite would be a major source of HAP. This would apply even if the collocated R&D and manufacturing were each minor in and of themselves. The plantsite would then be subject to any R&D NESHAP that would be promulgated. Mr. Lutz emphasized that military installations have serious collocation issues, as R&D is always located at a base, most of which are major sources. Mr. Hmiel, and Mr. Wehrum advocated adopting the applicability approach that is used under the Title V operating permit for any R&D NESHAP regulation. Collocated R&D can be exempted from Title V applicability unless it is major in and of itself. Mr. Wehrum questioned whether the EPA had any latitude to adopt such an approach for any R&D NESHAP that might be developed. Mr. Barnett indicated that better information on emissions from collocated R&D was needed before the Agency could determine whether there was any latitude in addressing this issue. It may be possible to exempt collocated R&D if the emissions are very low. However, the EPA would have to carefully craft any exemptions to ensure that other NESHAP were not undermined.

Mr. McGaw explained the difficulty of determining who owns or operates various laboratories. For example, Harvard has a new medical research facility in which multiple organizations conduct research in biosciences laboratories collocated in a single building. To further complicate the situation, some of the organizations contract out their research to other entities. Mr. McGaw explained that a bevy of lawyers are trying to sort out who is responsible for what research. This issue impacts two components of major source applicability determinations --whether the source is commonly controlled and whether the source is collocated. He emphasized that the EPA would need to allow flexibility concerning co-owned and collocated academic R&D operations in any regulation that might be developed, or it would be very difficult to conduct R&D.

2.2.5 Other Stakeholder Comments

Ms. Lee-Jeffs, Mr. Prashan, and Mr. Wehrum pointed out the positive effects of R&D operations on human welfare.

Ms. Broome questioned why the EPA stated that there were 2-3 stand alone R&D major sources, rather than a single number. Mr. Barnett replied that other sources may be major, but the available emissions information on these sources was based on engineering judgment, rather than on hard data. For this reason, the Agency is reluctant to state that they are really major sources.

Mr. Lee believed that add-on controls were not feasible for academic laboratories, and would be prohibitively expensive.

3.0 INFORMATION NEEDS

The objectives of this session were to determine what information needs to be gathered concerning R&D, and when and how it should be collected. The EPA presented the following information needs related to the R&D listing determination.

- Comprehensive list of stand alone and collocated R&D in all State/local jurisdictions
  - Actual HAP emissions data from pilot plants & labs
- Actual plant wide HAP emissions data
  - Control devices used
  - How the actual emissions and potential to emit (if calculated) were determined
- Regulatory and permit requirements for R&D facilities
- What are the inherent or operational limits on Potential to Emit (PTE)?
- Instances/information about pilot plants in academic settings
- What regulations/policies would both meet statutory requirements and allow flexibility?

The EPA made available the draft R&D Facility Questionnaire Survey (Appendix D). The questionnaire was intended to generate discussion on what information may be needed, not as an example of the data that will be collected. Stakeholders discussed information needs and developed recommendations for next steps in evaluating R&D.

The first part of the discussion concerned the need to identify the various types of R&D, including those not listed on the draft questionnaire. Mr. Barnett indicated the need to better describe R&D, including the definitions of laboratories and pilot plants. Stakeholders gave examples of other types of research, including rocket testing, combustion research, herbicide testing on farms, satellite launching, and turbine testing. Mr. Lutz (U.S. Air Force) and Mr. Dunn (Navy) emphasized that their organizations conducted research all over the United States in all types of locations, very few of which actually were laboratories or pilot plants. Mr. Vazquez indicated that most DOE operations concern R&D. EPA staff agreed that there was a need to identify and define all types of R&D.

Mr. Barnett summarized the information needed concerning research universities: (1) identification of the top 200 major research universities; (2) the number of labs and pilot plants at each; and (3) the HAP emissions from these institutions (e.g., whether less than half of the top research universities emit less than 2 tpy of HAP). Mr. Lee cautioned that the top 200 research universities may not comprise all the academic R&D sources that the EPA should consider. Significant resources for R&D occur in other academic institutions, he noted.

Some stakeholders suggested methodologies that could or could not be used to determine emissions. Ms. Hoenke suggested SARA 313 data as a source of HAP emissions information. Mr. Barnett indicated that SARA 313 does not disaggregate R&D HAP emissions from those of collocated sources. Mr. Hardiman and Ms. Hoenke emphasized that purchasing data is difficult to obtain and therefore is not a good way to get information concerning HAP emissions. Mr. Bernson indicated that Lucent has tried to quantify emissions for years. He stated that stack testing had been successful at giving a “snapshot” picture of emissions. As test methods improve,

the emissions information will also. However, continuous emissions monitoring (CEMS) or other real time measures of R&D emissions are not possible. Mr. Bernson emphasized that the emissions testing showed that purchasing records were not a good estimate of emissions. In 1996, Lucent purchased 150,000 pounds of HAP compounds, but actual emissions from stack test results were only a few tons. Mr. McKamey advocated basing emission estimates on solvent use by a representative group of researchers. Mr. DeSantis preferred that the EPA regulate a subset of the most acutely toxic HAP (e.g., xylene). Mr. Barnett indicated that the EPA would consider this. However, Mr. Vetter cautioned that the CAA requires regulation of all listed HAP (currently 188 compounds).

Several comments addressed specific information in the draft R&D Facility Questionnaire (Appendix D). Ms. Broome suggested that other R&D categories be added to Questions 7 and 8. Ms. Ritts and Ms. Broome believed that information on actual speciated plantwide HAP emissions would be difficult to obtain and were concerned that such information was included in the survey. Mr. Bernson advocated that the survey include whether control devices used for R&D were required for accidental release or other safety reasons.

The discussion then moved to focusing the data gathering effort. Opinions on how best to proceed varied considerably. There was no consensus on how this should be done. Some attendees believed that the EPA should define R&D and the methodologies for determining emissions prior to asking for additional information. These stakeholders believed that any data submitted without this direction would be a "mess" and would not be useful. Still others suggested the EPA collect initial information and use it to refine additional information requests. Mr. Barnett and others favored obtaining readily available information.

Based on these disparate views, it was decided that a subset of the stakeholders be appointed. The term "Wise Council" was used to describe this group. The Wise Council will be an ad hoc information-sharing group. It will provide input on how to proceed with the data gathering. The Wise Council will consider what existing information is available, what information is needed to make an informed decision concerning listing, and what strategies will be used to get the necessary information. The Wise Council will include a member from each of the key stakeholder groups. It will begin work at a conference call in the first week of December 1997, and will proceed as quickly as possible to develop information needed for an informed listing decision. The Action Items in Table 1-1 of this document outline the charge and initial responsibilities of the Wise Council.

4.0 LISTING OPTIONS

The EPA presented possible options for listing the R&D source category if a listing were to occur. This information is included on pages 29-31 of Appendix C. EPA staff emphasized that the options would only be used if a decision to list were made. They also indicated that identifying listing options would help to establish the kinds of information that should be collected. One of the Agency's objectives in collecting data is to identify any segments of the R&D industry that would not have to be listed.

Mr. Barnett presented the following as possible listing options.

- List one source category covering all R&D in all industries.
- For each listed industrial source category of HAP, list a corresponding R&D source category (e.g., pharmaceutical R&D NESHAP).
- Include R&D with collocated manufacturing source category (e.g., semiconductor NESHAP would include provisions for semiconductor R&D).
- List source categories for labs, pilot plants, and other R&D categories.
- List separate categories for educational, medical, and non-commercial.

Stakeholders did not identify additional options.

Mr. Wehrum strongly advocated a listing option that only includes any segments of the industry that need to be regulated. He referenced the Industrial Process Cooling Tower NESHAP as a precise listing that only captured the sources that should be regulated. He preferred that the listing be based on source categories (i.e., industry types).

Mr. Flaniken questioned whether R&D was different across industries. Mr. Barnett stated that laboratory research is similar across industries, and it might make sense to group laboratory research together. He also stated that some industries might reasonably be grouped together. For example, it might make sense to group pilot plants in the chemical and pharmaceutical industries together. However, Mr. Barnett explained that it would be difficult to develop standards for a single rule encompassing all types of R&D.

Mr. Reinhardt, Ms. Dudley, and Mr. Dunn preferred a work practice standard for laboratories. Mr. Reinhardt noted that a work practice standard such as those under OSHA would allow needed flexibility. It would also allow many labs to be grouped together in a single standard. Ms. Dudley emphasized the enormous resources already devoted to Environmental Health and Safety (EHS) considerations, which include work practice standards to meet waste management and safety requirements. These practices also minimize air emissions. Mr. Barnett agreed that a work practice standard could be an appropriate form for any regulation that might be developed for research laboratories.

Mr. Vazquez believed that source category groupings would have no relevance for Department of Energy (DOE) and other government facilities.

5.0 POTENTIAL TO EMIT

Mr. Barnett presented information concerning PTE in R&D, including methods in use for calculating PTE and inherent limitations on PTE. These are summarized on pages 32-35 of Appendix C. Mr. Barnett explained that PTE is a statutory concept. It is important in ensuring that any source that would be able to exceed major source emission thresholds does not do so over time by operating a piece of equipment or facility at higher than normal capacities. However, the Agency recognizes that PTE is a problem in R&D operations. EPA staff are aware that R&D operations do not typically run 8760 hours a year (i.e., 24 hours a day, 365 days a year). For enforcement purposes, it is critical for the EPA to determine what the limitations on R&D are. Mr. Barnett indicated that the EPA will consider whether there is an option to avoid basing applicability for any potential R&D rulemaking that might be developed on PTE.

Ms. Bartz, Mr. Hmiel, and Mr. Burkhardt advocated that PTE be determined on a case-by-case basis. Ms. Bartz and Mr. Burkhardt further indicated that PTE should not be based on operation 24 hours a day or 8760 hours a year. Mr. Barnett suggested that it may be best for State and local agencies to determine PTE, but that the EPA would need to be assured that they were using appropriate methodologies. Mr. Reinhardt and Mr. Moody preferred that the EPA give State and local agencies guidance on how PTE for R&D should be determined. Otherwise, there will be a lot of disparity in how PTE is determined, which would be unfair to sources.

Mr. DeSantis recommended that the EPA avoid the PTE issue by regulating pound per hour (lb/hr) emissions of highly toxic chemicals, which is how toxic pollutants were regulated in New York until recently. Lb/hr limits would not need to be established for all HAP, but rather for a subset comprising the most toxic HAP. Mr. McKamey opposed this approach, stating that a single hour could throw a source into noncompliance.

Mr. McGaw questioned why PTE calculations would be necessary if a source's actual emissions were below 10 and 25 tpy. Mr. Vetter explained that CAA Section 112 requires the Agency to consider a facility's PTE. Even if the Agency could rely solely on information on actual emissions, an annual certification that actual emissions were below 10 and 25 tpy might be required, since emissions could fluctuate significantly from one year to the next.

Ms. Hoenke recommended that the Wise Council review existing information about PTE.

Mr. Hmiel stated that PTE for lab hoods varied significantly, depending on the use of the hood.

6.0 TITLE V ISSUES

Mr. Barnett discussed implications of an R&D NESHAP for Title V permitting. This information is included on pages 36-37 of Appendix C. If a source is subject to a NESHAP, it is subject to Title V under CAA section 501(2)(A). Therefore, the promulgation of an R&D NESHAP would mean that requirements under the Title V operating permit regulation would apply to R&D sources. Title V allows a separate applicability determination for R&D and collocated manufacturing operations. Without a promulgated R&D NESHAP, R&D operations can emit major amounts of HAP and not necessarily pull the rest of the plantsite into Title V.

Mr. Barnett indicated that the EPA is aware that industrial stakeholders have concerns regarding the impact of an R&D NESHAP on Title V permitting. The EPA realizes the need for flexibility in permitting R&D sources. The Agency does have flexibility, when writing MACT standards, to exclude nonmajor sources of HAP from Title V requirements. Any potential rule and the permitting requirements could be structured so that R&D facilities have the flexibility to change processes, chemicals, and controls without having to modify the permit.

Mr. Reinhardt bemoaned the disparate treatment of R&D under Title V and the NESHAP program. The EPA White Paper (Lydia N. Wegman, U.S. EPA OAQPS, *White Paper for Streamlined Development of Part 70 Permit Applications*, July 10, 1995) listed benchscale laboratory operations as trivial activities that are exempt from Title V permitting requirements. He indicated that the State agency was confused regarding Agency guidance for R&D in their permit. He requested that the EPA develop a consistent approach in handling R&D across programs. Mr. Hmiel agreed with Mr. Reinhardt.

Mr. Hmiel explained that many R&D operations have nothing to do with the collocated manufacturing, but are at the same plantsite because the facilities to conduct R&D happened to be there. It seems unfair for R&D to be regulated as a major source simply because it is located at the same plantsite by default. This is especially the case at older facilities.

Mr. Lutz indicated that the Title V applicability issues raised for collocated R&D would be a particular problem for military installations. Military R&D is always located at a military base. The bases are usually major sources, and the R&D operations do not have control of basewide PTE .

APPENDIX A.
WISE COUNCIL MEMBERS

Wise Council Members (As of December 18, 1997)

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APPENDIX B.

MEETING AGENDA

AGENDA
NOVEMBER 18, 1997 R&D SOURCE CATEGORY LISTING STAKEHOLDERS' MEETING

The U.S. Environmental Protection Agency (EPA) will hold a stakeholder's meeting on November 18, 1997 in Durham, NC. We are getting the contract for the meeting room signed tomorrow and will send specific site information at that time.

The following is the draft agenda for the R&D Source Category Listing stakeholders meeting. The objective of this meeting is to discuss with stakeholders the following:

The fact that EPA hasn't decided whether to proceed with establishing a category for R&D under Section 112(c)(7);

present a review of information we have gathered and request assistance for filing data gaps;

pros and cons of the various ways to list R&D;

possible protocols for calculating PTE for R&D facilities; and

discuss the concerns relating to the impacts of Title V on R&D facilities.

We realize that many stakeholders are questioning the need to list R&D at all. Many of these questions relate to legal interpretations of whether Section 112(c)(1) applies if the EPA decides to establish a category under Section 112(c)(7). Several stakeholders are also questioning whether the source category is large enough to merit the attention of EPA at this time.

We need to limit the discussion of the issues in the above paragraph to the time allotted in the agenda. The major purpose of this meeting is to discuss the information needed to make an informed decision on listing R&D facilities, inform stakeholders what we have found and the comments received, and discuss the timing of this project.

There have also been questions raised concerning why listing options are being discussed at this time. The reason is that though we do not have a final decision on whether to list or not, we need to take this opportunity to discuss listing options to assist in focusing our data gathering efforts, and to provide stakeholder input prior to listing if we do make the decision to list this source category.

MEETING AGENDA (cont'd)

Time	Discussion Item
8:30 to 8:45	Introduction, Discussion of Agenda
8:45 to 10:15	Opening Remarks by Bruce Jordan, Director, Emissions Standards Division including discussion of listing decision.
10:15 to 10:30	Break
10:30 to 11:00	Summary of information gathered to date, and comments received.
11:30 to 12:00 Noon	Identification of additional information needed to make an informed listing decision, input from stakeholders of ways to obtain necessary information and schedule.
12:00 Noon to 1:00	Lunch
1:00 to 2:15	Discussion additional information gathering (Continued)
2:15 to 2:45	Presentation of possible listing options if a decision is made to list R&D, stake holder input on additional options, discussion of pro and cons of options.
2:45-3:00	Break
3:00 to 4:00	Methods used to calculate potential to emit for R&D, request for information on alternate methods, identification of inherent limitations on R&D emissions
4:00 to 4:30	Discussion of issues relating to Title V, and options to maintain R&D flexibility under Title V requirements

APPENDIX C.
OVERHEADS

APPENDIX D.
DRAFT R&D FACILITY QUESTIONNAIRE

Draft R&D Facility Questionnaire

1. Please provide a brief description of the primary function(s) of the plantsite. (e.g., semiconductor research)

2. Please answer yes or no to the following questions concerning the R&D facilities at the plantsite.

   _____ The primary purpose is to conduct research and development into new processes and products.

   _____ It is under close supervision of technically trained personnel.

   _____ It is not engaged in the manufacture of products for commercial sale, except in a *de minimis* manner.

3. Does the plantsite contain only R&D, or is the R&D facility collocated with manufacturing?

4. What Standard Industrial Classifications (SIC) codes do the R&D facilities have? (List all that are applicable.)

5. What SIC codes does any collocated manufacturing have? (List all that are applicable.)

6. Which of the following classifications describe the plantsite?

   ___ Industrial
   ____ University/Academic
   ____ Medical Laboratory
   ____ Government
   ____ Military
   ____ Institutional
   ____ Other (describe)

7. How many pilot plants are located on the plantsite?

8. How many benchscale R&D laboratories are located at the plantsite?

Draft R&D Facility Questionnaire (cont'd)

9. Please provide a brief list of the R&D major processes, emission points, and control technologies at the plantsite. (e.g., reactors/scrubbers)

Process/Emission Point	Control Technology
_____	_____
_____	_____
_____	_____
_____	_____

10. What are the actual annual HAP emissions?

11. How are the actual annual HAP emissions from the contiguous plant determined?

_____ Chemical Use Assuming 100 percent purchased emitted

_____ Chemical Use with Emission Factor

_____ Emissions Testing

_____ Laboratory Hood Use with Emission Factor

_____ Modeling to determine ambient concentration at fenceline

_____ Other (R&D personnel, hours of operation with emission factor, etc.)

12. What are the actual annual HAP emissions from all pilot plants located at the plantsite?

13. How are the actual annual HAP emissions from all pilot plants located at the plantsite determined?

_____ Chemical Use Assuming 100 percent purchased emitted

_____ Chemical Use with Emission Factor

_____ Emissions Testing

_____ Laboratory Hood Use with Emission Factor

_____ Other (R&D personnel, hours of operation with emission factor, etc.)

Draft R&D Facility Questionnaire (cont'd)

14. What are the actual annual HAP emissions from all R&D laboratories located at the plantsite?

15. How are the actual annual HAP emissions from all R&D laboratories located at the plantsite determined?

_____ Chemical Use Assuming 100 percent purchased emitted

_____ Chemical Use with Emission Factor

_____ Emissions Testing

_____ Laboratory Hood Use with Emission Factor

_____ Other (R&D personnel, hours of operation with emission factor, etc.)

16. Are the pilot plants ever used as backup for commercial production? (i.e., other than to produce test products) If so, how frequently?

17. How many product days occur annually at each pilot plant? (1 day of producing 3 products = 3 product days)

18. Is any collocated manufacturing equipment ever used for R&D? If so, how frequently?

19. What amounts of chemicals are typically used in the R&D laboratories? (e.g., 1 ml- 4 l)

20. What amounts of chemicals are typically used in the pilot plants? (e.g., 50 l- 1000 l)

21. How is chemical use at the plantsite tracked? Is there a comprehensive inventory of all chemical use on site? Are HAP tracked separately or is the inventory for Volatile Organic Compounds (VOC)?

Draft R&D Facility Questionnaire (cont'd)

22. Please check each of the following that apply.

_____ The plantsite is a Title V major source.
_____ The R&D operations are a Title V major source.

_____ The plantsite is a synthetic minor source under State/local operating permit regulations.

_____ The R&D operations are a synthetic minor source under State/local operating permit regulations.

_____ The plantsite is a true minor source under Federal operating permit regulations.

_____ The R&D operations are a true minor source under Federal operating permit regulations.

23. Is the plantsite subject to State or local agency toxic air pollutant regulations, policy, or guidelines? If so, how many HAP are covered?

24. Does the State/local agency have ***de minimis*** cutoffs for determining whether R&D is subject to permitting? If yes, what are they? Do the cutoffs apply to labs, pilot plants, pieces of equipment, etc.?

25. What are the inherent or operational limitations on PTE for R&D? Check all that may be applicable.

_____ Number of product days

_____ Amount of product

_____ Amount of chemicals used

_____ Number of lab hoods

_____ Hours of operation

_____ Number of R&D staff

_____ Amount/size of pilot plant equipment

_____ Restriction on operations due to other regulations (e.g., FDA in pharmaceutical industry)

_____ Others? (Describe)

Draft R&D Facility Questionnaire (cont'd)

26. Are you aware of any pilot plants that are located in university/academic settings? If so, where?

APPENDIX E.
MEETING ATTENDEES

Stakeholder Meeting Attendees

Organization	Name	Phone	Fax	Email
Aerospace Industries Association of America, Inc.	Mr. Glynn Roundtree	202-371-8401		glynn@aia-aerospace.org
Aluminum Company of America	Mr. John Lease	412-337-5591	412-337-1854	john.lease@alcoa.com
Aluminum Company of America	Mr. Michael Palazzolo	412-553-4832	412-553-3835	michael.palazzolo@alcoa.com
American Petroleum Institute	Ms. Ellen Siegler	202-682-8271	202-682-8033	siegler@api.org
BASF Corporation	Mr. Tom Hmiel	973-426-2624		hmielt@basf.com
Chemical Manufacturers Association	Ms. Rasma Zvaners	703-741-5249	703-741-6099	rasma_zvaners@mail.cmahq.com
Chevron/Laboratory Safety Alliance	Ms. Katherine Hoenke	510-242-3380	510-242-5856	chis@rrc.chevron.com
Columbia University	Ms. Loretta Greenholtz	212-854-8749	212-316-4937	lg20@columbia.edu
Decisions and Agreements	Mr. John Lingelbach	303-534-0500	303-534-4900	lingelbach.aol.com
Department of Energy	Mr. Gustavo Vazquez	202-586-7629	202-586-0955	gustavo.vazquez@eh.doe.gov
Department of the Navy	Mr. Mike Dunn	703-602-4060	703-602-4032	045@safety.ih.navy.mil
Department of the Navy, Naval Air Systems	Mr. Steve Hartle	301-342-8006	301-342-8062	hartle_steven%pax5@mr.nawcad.navy.mil
Dow Corning Corporation	Mr. Thomas A. Kovacic	517-496-5216	517-496-4175	usdcc4jc@ibmmail.com
Duke University	Dr. Wayne Thomann	919-660-1558		thoma010@mc.duke.edu
Eastman Chemical Company	Ms. Sandra Dudley	423-224-7376	423-224-7121	sdudley@eastman.com
Eastman Kodak Company	Ms. Deborah Chapin	716-722-4731	716-722-3695	dlchapin@kodak.com
EC/R	Ms. Kavita Bhatia	919-484-0222	919-484-0122	
EC/R	Mr. Graham Fitzsimons	919-484-0222		
EC/R	Ms. Janet McDonald	919-484-0222	919-484-0122	ecr-rtp@mindspring.com
EC/R	Mr. Phil Norwood	919-484-0222	919-484-0122	philnorwood@mindspring.com
EPA - ESD	Ms. Susan Wyatt	919-541-5674		
EPA - ESD	Mr. Bruce C. Jordan	919-541-5572		
EPA - OGC	Mr. Richard Vetter	919-541-2127		
Genentech, Inc.	Mr. Roy Hardiman	650-225-1763	650-952-9881	hardiman.roy@gene.com
General Electric Company	Ms. Shannon Broome	203-373-3575	203-373-3389	shannon.broome@corporate.ge.com
Harvard University	Ms. Suna Bayrakal	617-496-1218		suna_bayrakal@harvard.edu
Harvard University/NACUA	Mr. Robert McGaw	617-495-1228	617-495-5079	eagle@harvard.edu
Hazen Research, Inc.	Mr. Steve Flaniken	303-279-4502	303-278-1528	flaniken@ix.netcom.com
Lucent Technologies	Dr. Larry Bernson	908-582-3616	908-582-4515	lbernson@lucent.com
Merck & Co., Inc.	Dr. Mike McKamey	732-594-3288	732-594-8098	mckamey@merck.com
Merck & Co., Inc.	Ms. Ann Lee-Jeffs	732-423-7888	732-735-1109	ann_leejeffs@merck.com
Minnesota Pollution Control Agency	Ms. Margaret Bartz	612-297-8113		Margaret.bartz@pca.state.mn.us
NASA	Mr. Paul Goozh	202-358-1414	202-358-2861	paul.goozh@hq.nasa.gov
National Environmental Stratgies	Mr. Marc Himmelstein	202-333-2524	202-338-5950	marchimmel@aol.com
NEDA/CARP	Ms. Leslie S. Ritts	202-637-6573	202-637-5910	lsr@dc2.hhlaw.com

Stakeholder Meeting Attendees (cont'd)

NEDA/CARP Steering Committee	Ms. Barbara Bankoff	202-434-4810	202-347-4015	babankof@erols.com
North Carolina State University	Mr. Duane A. Knudson	919-515-6859		duane_knudson@ncsu.edu
NY State Dept. of Environ. Conservation	Mr. Steven DeSantis	518-457-7688		sxdesant@gw.dec.state.ny.us
Peters/3M	Ms. Karna Peters	612-736-8570		golfpsb@runestone.net
Procter & Gamble Company/NEDA/CARP	Mr. William T. Burkhart	513-634-6366	513-634-5481	burkhart.wt@pg.com
Schering Corporation	Mr. Russ Cerchiaro	908-629-3426	908-629-3020	JOSEPH.CERCHIARO@spcorp.com
Soap & Detergent Association	Mr. Dennis Griesing	212-725-1262	212-213-0685	dgriesing@sdahq.org
Stanford University/Laboratory Safety Alliance	Mr. Lawrence M. Gibbs	650-723-7403	650-725-3468	LGibbs@leland.stanford.edu
Swidler & Berlin Chartered	Mr. William L. Wehrum	202-424-7773	202-424-7643	wlwehrum@swidlaw.com
Union Carbide Corporation	Mr. Freddy Sizemore	304-747-3713	304-747-5924	None
University of Califorina	Mr. John Lee	510-422-7073		lee19@llnl.gov
University of Louisville	Ms. Cheri Hildreth	502-852-6670	502-852-0880	clhild01@ulkyvm.louisville.edu
University of Minnesota/CSHEMA	Mr. Craig S. Moody	612-626-6002	612-624-1949	moody002@maroon.tc.umn.edu
University of North Carolina	Mr. Rich Miller	919-962-5718	919-962-0227	rlm.hsafety@mhs.unc.edu
University of Vermont/LCEE	Ms. Milly Archer	802-656-5402	802-656-5407	marcher.@esf.uvm.edu
University of Wisconsin/American Chemical Soc.	Mr. Peter Reinhardt	608-262-9735	608-262-6767	
USBI Company	Ms. Gail Murphree	205-544-3020	205-544-3995	murphreeg@usbi.com
U.S. Air Force	Mr. Timothy Lutz	505-846-4573	505-846-4394	lutzt@plk.af.mil
Womble Carlyle	Mr. Charlie Carter	919-755-2167	919-755-6046	c_carter@wcsr.com
W. H. Brady Company	Mr. Patrick Hennessy	414-358-6600	414-358-5283	Pat_Hennessy@WHBrady.com