

## **SCOPE OF WORK-NON UTILITY SECTOR ALLOCATIONS**

### **A. BACKGROUND DISCUSSION**

The distribution of regional SO<sub>2</sub> allowances to existing sources in the nine Commission Transport States is composed of two portions: floor and reducible allocation. There are two components of the floor allocation - an allocation for the California Regional Clean Air Incentives Market (RECLAIM) program, and source-specific floor allocations for non-RECLAIM sources. The floor allocation is a minimum allocation for all existing sources, which will be calculated to ensure that well-controlled sources will receive a full allocation.

**California RECLAIM Program:** 3,462 SO<sub>2</sub> allowances will be included in the California budget for RECLAIM sources. These credits will be a subset of the existing source pool for the state of California and, hence, will not consume any extra credits from the total credit pool.

**Source-specific Floor Allocation:** A floor allocation will be calculated for all existing sources in the region based on some specified level of control (e.g., Best Available Control Technology [BACT], Best Available Retrofit Technology [BART], Lowest Achievable Emission Reduction [LAER]) for non-utility sources.

The sources affected by the backstop trading programs are all those stationary sources in participating states and tribes that emit SO<sub>2</sub> in an amount greater than or equal to 100 tons per year. The 100 ton cut off will be assessed at the plant level to correspond with the methodology used in the 1990 emissions inventory. Among the source types covered by this definition are utility and industrial boilers, refineries, smelters, pulp and paper mills, cement and lime kilns, and all of the other source categories listed in section 169 (g) (7) of the Clean Air Act (CAA).

In the proposed approach listed below, the geographic area of analysis is defined to be the nine Commission Transport Region States, which are Arizona, California, Colorado, Idaho, Nevada, New Mexico, Oregon, Utah, and Wyoming. Facilities to be included in the analysis are those that emitted 100 tons per year or more of SO<sub>2</sub> sometime during the period 1990 to 2000. Plants that are electric utilities are excluded from this analysis.

### **B. TASK 1–SOURCE EVALUATION PLAN**

The purpose of this task is to evaluate the time, effort and cost of conducting a source-by-source facility-by-facility analysis. The principal constraint in performing a source level analysis of floor amounts is having complete and accurate information about SO<sub>2</sub> emitting processes, control techniques in-place, and their efficiency. The Contractor also needs to know a source's activity (Source

Classification Code [SCC] units per year) to average the higher of two of the last three latest years of data at the time the calculation is performed. In addition, it may also be informative to know the maximum design rate or boiler design capacity of the unit to compare recent annual activity with the maximum possible activity level.

The primary emission data base that is a candidate for performing such an analysis is the 1996 WRAP point source emissions file. The Contractor is familiar with the SO<sub>2</sub> emissions and control information in this data base through using it in the 2018 emission forecast and through the quality assurance effort that the Contractor is currently performing for the WRAP Emissions Forum. Under this task, the Contractor will use the information reported in this 1996 data base to evaluate the accuracy and completeness of the data elements listed in the above paragraph for evaluating the floor allocation for the approximately 200 facilities with SO<sub>2</sub> emissions of 100 tons per year or more in the Nine Commission Transport region states. The Contractor will work with the Non-Utility Allocations Working Group to determine the data base variables that should be included in this analysis. Then, the Contractor will use the 1996 data base to provide data summaries to the Working Group that identify where data are missing or incomplete.

In addition to using the 1996 WRAP Point Source Inventory, the Contractor will also review the 1999 point source files that the states have submitted to U.S. Environmental Protection Agency (EPA) for incorporation in the 1999 National Emission Inventory (NEI). To date, six of the nine transport region states have submitted statewide point source data to EPA. The Contractor is also under contract to EPA to incorporate these data sets in the 1999 NEI version 2. It is expected that the 1999 data could be valuable in providing a more than one year examination of operations at the non-utility sources that are of interest in this study. Before using these 1999 data, though, we will ask the states for permission to use these data sets in this project, because the states and EPA have an agreement to not release these files for public use until June 2002.

Given the timeline for this project, it is expected that the most efficient method for collecting the information needed to conduct a source-by-source analysis will be to make arrangements with the emission inventory contacts in each state to obtain the needed information, or to hear from them that the requested information is not available. The Contractor has been working with the emission inventory contacts in each state, so we have some experience with such data exchange. States where contacts may be needed with staff beyond the state staff person include Nevada and California. For Nevada, Clark County and Washoe County are responsible for emissions inventories in their counties, so separate contacts are needed for these two areas. (There are only two 100 tpy facilities in Clark County, and none in Washoe County.) In California, the air districts report point source information to the Air Resources Board. It is expected that The Contractor would need to interact with the air district staff directly in order to have complete

information about point source characteristics in California. This may be a manageable effort if we can isolate the air district contacts to a small number of districts. Because the RECLAIM program covers sources in the South Coast Air Basin, the effort for Southern California will be limited to identifying the facilities that are included in RECLAIM (no source level information will be needed for RECLAIM facilities). Therefore, it may be possible to limit the air district contacts to the Bay Area Air Quality Management District (AQMD) and the Bakersfield area, and perhaps one or two others.

If the states and air districts can supply the bulk of the information needed to perform the analysis, there may be occasions where the Contractor can contact facilities directly to gather missing information. This type of contact will be made only if the Working Group agrees to this.

In any case, the product of this task will be an analysis of the point source data available now for evaluating floor allocations, and a proposed plan for augmenting this data set with additional information from state air pollution control agencies, and possibly sources themselves. Once the Working Group reviews and approves this plan, the Contractor will execute it. The result is expected to be a regional data set with more complete reporting of information relative to the needs of this project.

### **C. TASK 2—SOURCE CATEGORY FRAMEWORK**

The Contractor proposes to use the information in the 1996 WRAP point source file to determine the appropriate organization for evaluating floor allocations for non-utility sources. This effort will be similar to that performed by the U.S. EPA in determining appropriate source categories for Maximum Achievable Control Technology (MACT) emission standard-setting under Title III of the CAA Amendments (albeit on a smaller scale). The 1996 point source file is organized by SCC, so these codes will be used to organize this evaluation.

The first step in this process will be to provide a Tier 3 summary of SO<sub>2</sub> emissions from facilities with more than 100 tpy of SO<sub>2</sub> (in any year 1990 or later). The Tier emission summary system was developed by the Contractor for EPA in order to have standard formats for summarizing emissions information. This Tier 3 summary will assist in identifying whether the non-utility source sectors in the RFP cover 98 percent or more of the emissions in the transport region.

To follow-up the Tier summary, the Contractor will examine SO<sub>2</sub> emissions at the SCC-level, will rank order these emissions highest to lowest, and will evaluate all of the SCCs within the cumulative distribution that contributes 98 percent of total SO<sub>2</sub> within the region to see whether they are already included in the RFP-listed non-utility sectors. Any that are not already included will be

identified to the Working Group, and a recommendation will be made about how to include these source types in the overall schema for this analysis. This recommendation will be based on both the total SO<sub>2</sub> emissions contribution from the source category, and the emissions per unit of production (the emission rate).

The end product of this task will be a table that provides a list of the source categories and associated SO<sub>2</sub> emissions to be included in the floor allocation computation. Reasons for including or excluding source categories from this list will be provided. The analysis will also include estimates of the range of emissions performance within each source category based on the reported emissions rate.

#### **D. TASK 3—CASE STUDY EXAMPLES**

Work areas 2.3 and 2.8 in the RFP are interrelated and are associated with the determination of the emission floor for a specific set of sources. The Contractor's proposed approach combines the two tasks into a single task that includes both analysis and documentation of floor development for three facilities. The emission levels at the floor are defined to be the emissions that would have resulted from the application of the technologies and/or emission reductions identified in Appendix A. The overall purpose of the task is to document via example calculations how the floor would be established, and to point out, with the cooperation of volunteer facilities, some of data issues that may be faced by states in developing the floor for the non-utility sector.

For each of the three source types selected (i.e., a small, medium, and large source), The Contractor will seek volunteer sources using the guidance of the Working Group participants, and then, if necessary with trade associations such as the Western Oil and Gas Association. As the RFP suggests, the most desirable facilities will be ones with a mix of sources, such as petroleum refineries, where the combination of boilers, process heaters, sulfur recovery, and other units allows a more complex analysis. Ideally, in order to document the effect of variations such as size and mix of units and other differences, it would be beneficial to select all three facilities from a single industry. Other advantages from using examples within a single sector include the ability to identify differences due to process variations like crude feed and product slate and location (some locations may have more stringent regulations than others). For each of the volunteer sources, the Contractor will work with the facilities to determine the mix of emission sources. Emission sources or unit means the collection of various types of SO<sub>2</sub> sources at a particular facility. This effort is expected to focus on a mixture of combustion sources like boilers, turbines, etc. and various process units. Any additional source types beyond the nine identified in the RFP will be identified and included in the facility description. The Contractor will determine baseline and uncontrolled emissions based on both the 1996 inventory and additional data from the sources. Data that may be needed from the facility will relate to the extent that baseline emissions are controlled, and the type of control technology in current use.

Based on the uncontrolled emissions, reductions in accordance with the technologies described in Appendix A will be applied. Emissions after this reduction represent the floor emissions. The floor emission factor will be the total facility emissions divided by the source production capacity (i.e., lbs. of SO<sub>2</sub> /barrel of oil capacity or lbs. SO<sub>2</sub> /ton of cement).

The mixture of data needed from the facility and the existing databases will provide the information that will be used to illustrate the procedures that states would use to develop the floor allocation for specific facilities.

#### **E. TASK 4—LEVEL OF PERFORMANCE ANALYSIS**

Using the list of source categories developed for Task 2, the Contractor will analyze the level of performance of emission control for each individual SO<sub>2</sub> source being considered in this analysis. Then, within each facility, the overall level of performance will be computed across all sources of a similar type. Information from this analysis will be reported at a facility-level, and also by source category within each facility.

The existing level of SO<sub>2</sub> control will be estimated from the reported SO<sub>2</sub> control efficiency if that value is provided. Range checks will be performed for the reported control efficiency values to determine if they are within the expected range of values for the reported control device. If no control efficiency is provided, the Contractor will use the reported SO<sub>2</sub> annual emissions and the annual operating rate to compute an emission rate. This emission rate will then be compared with the standard EPA AP-42 emission factor for the process (SCC) to determine if the emission rate is significantly below the standard value. If so, then an SO<sub>2</sub> control efficiency will be imputed for that source and recorded in the data base. Efforts will be made with the state agencies (or the sources themselves) to confirm that there are SO<sub>2</sub> controls in place at the units with imputed control efficiencies.

The product of this task will be an analysis that reports the minimum and maximum levels of emissions control on the western state sources for each source category.

#### **F. TASK 5—MAXIMUM PRODUCTION CAPACITY**

The purpose of this task is to define the maximum industry production capacity for each source category/sector, and to compare this with production levels for the past five years. Based on project timing, and data available now, this will be a difficult task to perform quantitatively during the project period. Experience shows that the measures of production capacity like boiler design capacity and maximum design rate are infrequently reported in state point source emission inventories. Efforts will be made as part of Task 1 to collect this information from states and sources, but they can claim that this is confidential information. It may

be possible to have discussions with the various affected industry groups to determine how each industry is performing in relation to its potential production capacity. Industry statistics can also be used for this analysis.

As an example, the Contractor performed an analysis during 2000 that examined petroleum refining production versus capacity, and this analysis found that west coast refineries were operating at close to maximum capacity and that any expansion of existing refining capacity is likely to occur at Gulf Coast refineries, which are outside the study region. Industry publications such as the *Oil and Gas Journal* will be used to determine facility-level capacities for refineries in the study region if this information is not available in the 1996 point source data base.

Some of the source categories on the non-utility sector list can occur across many industries. This includes industrial boilers and cogeneration (also known as combined heat and power). So, the future utilization of these units relates to potential expansion at the plant, the unit's capacity to expand, and for cogeneration both of the above, plus the electricity market. We do not propose to analyze the electricity market of part of this task, but can evaluate both plant capacity and unit capacity as part of the industrial boiler and cogeneration unit analyses.

#### **G. TASK 6—FLOOR LEVEL ANALYSIS**

This task is to apply the procedures used to define the floor level of SO<sub>2</sub> emissions control from the Task 4 analysis and to each individual source/source category in the 9-state region to estimate the resulting emissions after the SCC specific floor level emission control is applied. This will be accomplished by defining an SO<sub>2</sub> control efficiency for each SCC to represent the floor-level of control, and applying this efficiency to all sources in that category that have not already reached that control efficiency. Results will be compared with the SO<sub>2</sub> emissions level that has been previously assigned to the non-utility sector by the WRAP. These results can be summarized at whatever level of detail is of interest to the Working Group.

#### **H. TASK 7—CONTROL GUIDELINE DEVELOPMENT**

The purpose of this task is to use the information from the Task 4 analysis to develop a control technology guideline with the estimated floor SO<sub>2</sub> control efficiency (and associated control device that achieves this efficiency) for each source sector that contributes to 98 percent of the non-utility SO<sub>2</sub> emissions in the region. This analysis will be summarized in the same format as Appendix A of the RFP. There will also be a written evaluation for each source category provided that explains the rationale for selecting that control level as the floor.

#### **I. TASK 8—REPORTING**

The product of each of the above tasks will be a technical memorandum that describes the methods and results for that task. A separate memorandum will be provided for each task. During the project period these technical memoranda will be distributed to the Working Group via email. Printed and electronic copies will be provided to the Western Governors' Association.

After all of the tasks are completed, the individual technical memoranda will be combined into a single project report. This draft report will be circulated to all Working Group members for comment. The final report will reflect these comments.

Project meetings can occur as needed during the project. The Contractor's long distance travel cost estimates are based on there being two meetings during the project period. It is expected that the first project meeting will occur one month into the performance period. By that point in the project, enough information should have been prepared for the Contractor to brief the Working Group on the findings to date. The primary purposes of this meeting will be to provide information about the data that is available for performing the analysis, and to have initial discussions about what the floor level controls are for each non-utility source category.

The second meeting is planned for near the time when the draft report is circulated in order to present the project results and to address questions and comments about the results, and how they are documented in the draft report. Conference calls can be held with the Working Group as needed during the course of the project.

Attachment B - Schedule

**Market Trading Forum Non-Utility Sector Allocation Schedule**

	Week of March 4	March 11	March 18	March 25	April 1	April 8	April 15	April 22	April 29	May 6	May 13	May 20	May 27
Task 1 - Source Evaluation Plan													
Task 2 - Source Category Framework													
Task 3 - Case Study Examples													
Task 4 - Level of Performance Analysis													
Task 5 - Maximum Production Capacity													
Task 6 - Floor Level Analysis													
Task 7 - Control Guideline Development													
Task 8 - Reporting													▲

▲ = Report Submitted to WGA