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PPG - LAKE CHARLES
INDUSTRIAL HYGIENE
UNIT REVIEW PROGRAM

Purpose: Unit Reviews are the primary mechanism for assuring that employees are not exposed to harmful levels of chemical and/or physical hazards. Data collected is used for several purposes. They are:

1. To identify chemical/physical hazard exposures in excess of internal exposure guidelines (PPG-IPEL's).
2. To properly select the type or degree of personal protective equipment for safe handling of potentially hazardous materials.
3. To determine the need for or effectiveness of engineering controls.
4. To provide plant management with information relating to compliance with OSHA regulations.

The Unit Review program is not intended to replace monitoring for specific compounds required under an OSHA comprehensive health standard (e.g. Asbestos - 1910.1001; Vinyl Chloride - 1910.1017). Refer to the Lake Charles - Standards Compliance Monitoring Plan for information related to that activity.

Administration: The Safety Coordinators will be accountable for the scheduling, coordination and reporting of Unit Reviews conducted within their respective areas. Over-all coordination, the annual schedule of reviews, and final critique will be the responsibility of the Plant Industrial Hygienist. Sample analysis and reporting will be done by the Environmental Laboratory Group on a charge-back basis. Some assistance in sample collection will also be available from Lab personnel.

Types of Unit Reviews:

1. Initial Review

This is the most comprehensive review performed. It is to be performed when (1) a new unit or process is started up; or (2) when similar data on an existing unit is not available.

2. Follow-up Reviews

If during an initial or periodic review an exposure problem is noted - follow-up monitoring is to be conducted to verify correction of the problem.

3. Periodic Reviews

Periodic reviews are intended to verify that chemicals, conditions, and/or exposure levels have not changed from the time of the initial review. They should be conducted not less than every two years after an initial review is completed.

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Procedure for Initial Reviews

I. Hazard Determination by Job Class

The first step in the unit review process is to compile a listing of job classes versus potential chemical/physical hazard exposures. A job class is not the same thing as a job title. In a given unit several employees with several different job titles might all be exposed to similar hazards. In that event sampling for one job title can be attributed to the remainder of the job class - thus reducing the over-all number of samples required. (However - in some cases the reverse might be true - i.e., one job title might have several job classes within.)

This determination can be accomplished by reviewing the Unit's chemical inventory (compiled for Haz-Com) with employees and supervision. The first group of chemicals to identify are those to which all employees are potentially exposed. This will be the "base" group of agents (chemical or physical) which all sampling will report. Next review the remainder of the hazard list and identify which job titles are exposed to which hazard. (Note: When compiling this list, do not neglect to include Supervision. In some cases their exposure potential may be greater than that of their employees.)

Finally, determine which job titles can be grouped together in separate job classes and list the total number of employees in each group. Remember that the intent is to reduce, where possible, the number of jobs to be sampled. Also, at that time identify any special (i.e., non-routine) tasks which occur and if the task is performed principally on one shift.

II. Hazard List Prioritization

The next step will be to take the listing developed in Part I, and:

- 1) Rule out those exposures which are unlikely because of chemical form or process design.
- 2) Review the Leidel-Busch data for any monitoring completed within the past 24 months. Identify those jobs/chemicals which have sufficient monitoring data to rule out exposure problems.
- 3) Identify the hazards associated with the remaining agents (acute versus chronic) and verify that standards (PPG IPEL or other) exist. Where no standard exists - contact the Plant Industrial Hygienist (or Chemicals Group Environmental Affairs) for assistance.

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III. Develop Monitoring Plan/Schedule

For each job class/title remaining on the list, prepare a list of the chemicals to be sampled for. Depending on the nature of the hazard(s) associated with each chemical - short term or shift long (or both) samples are to be collected.

1) Short term samples - 15 minutes in duration (STEL's) are to be collected for acute hazard materials and where a "ceiling" type IPEL or OSHA-PEL exists. These samples are to be taken during "maximum exposure potential" (MEP) tasks (e.g., process sampling, first line breaks, etc.). At least 6 samples must be taken for each "MEP" task, and each shift (where the task is conducted on more than one shift) must be represented.

2) Shift long samples (TWAs) are to be collected for chronic hazard materials. Each sample must be at least 7½ hours in duration. For those jobs which take a "lunch break" away from the work area - do not count the lunch time in the 7½ hours minimum period (sampling device must be turned off and secured during the lunch period). At least 3 samples per shift (for each applicable shift) must be taken for each job class.

All sampling must be completed during "normal" operating conditions and within 45 days of the first sample collected as part of the review.

IV. Sample Collection

Obtain the necessary sampling equipment and collection media from the Laboratory. Using the instructions they provide, conduct personnel monitoring for the jobs and chemicals remaining on the "Hazard" listing.

Special care should be taken when completing the sampling paperwork. In addition to completing accurately the sections on date, times, pump data, etc., sufficient information must be recorded on worker activity and any unusual occurrences to allow follow-up in the event of an over-standard result.

At the end of the sampling period, cap or otherwise secure the collection devices and return to the Laboratory for analysis.

V. Sample Analysis and Reporting of Results

Upon receipt of the samples, the Laboratory Group will distribute as necessary to the appropriate analytic group. After the results of analysis are received, the Lab will complete Form 3364, enter the data into the Pittsburgh A/P System, and return the completed forms to the originating Safety Coordinator. The Safety Coordinator will retrieve the Liedel-Busch statistics and begin his review of the data.

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VI. Initial Unit Review Report

The last step is the compilation of the final report. The complete report will contain:

- 1) The Hazard Determination listing compiled in Steps I and II.
- 2) The Liedel-Busch tables for monitoring conducted.
- 3) A listing of those jobs where there is significant difference between shift exposure levels.
- 4) A summary sheet of jobs/chemicals whose results exceed the 5% probability estimate ranked in descending order. These are the areas requiring special corrective action.
- 5) The proposed control measures to be implemented for each job in #3, along with the time table for implementation.
- 6) An abstract or summary of the results for management's use.

While #1 through #3 can be arrived at in a straightforward manner, #4 - "Control Measures" will require a joint effort between the Safety Coordinator and the Unit's Area Supervisor (and staff).

The final report must be approved by the Superintendent of the area and the Plant Industrial Hygienist. The entire report should be distributed then to the Area Supervisor, Plant Industrial Hygienist, and copy for your files. The report summary may receive a wider distribution (i.e. - Management Group, and to G. O. Chemicals - Environmental Affairs).

Procedure for Follow-up Reviews

Those job/chemical combinations that are identified (during the initial review) as requiring some control measure should be followed up with additional monitoring. This monitoring should focus on those jobs where changes, other than PPE, were made.

Where the control implemented was personal protective equipment (particularly respiratory protection), sufficient spot checks of jobs in progress should be made to verify both that the equipment is in use and that it is being used properly.

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Procedure for Periodic Reviews

1. Arrange to meet with the Unit's Area Supervisor and review the information assembled from previous review(s). If no changes have been made to chemicals used, job titles/assignments, or processes - proceed to Step 2. If any changes have been made, determine whether the magnitude warrants conducting another "initial review" (e.g. - major change in proces, etc.) or simply changing the Job Class/Chemical Listing is sufficient.
2. For each job class/chemical, conduct personnel monitoring using the same distribution of STEL & TWA samples as before. However, for those jobs previously listed as not varying from shift to shift - sampling need only be collected for one shift.
3. After sample collection and analysis is completed, the Leidel/Busch data should be examined for any significant changes from the previous exposure probability estimates (using combined data). Any such changes shall be reported to Area Supervison, and, where appropriate, control measures be implemented.

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