[This is an example of a general Industrial Hygiene program intended to help Industrial Hygienists in the development of a specific contractor IH program if one is not yet developed. It is not intended to be a final program but rather a helpful starting point for one. Each company will have differences in how their program will function; those should be described in the written procedures. The key element addressed in detail below is the exposure assessment process since many other program components would already be addressed in their own separate programs. Some sections below have only a general topic area described leaving it up to the person developing the program to determine what is needed to fit the specific needs of the contract company. A contractor IH program should be considered for all work locations not just those requiring it, similar to uniform safety procedures across all sites.]

XYZ Contract Company Industrial Hygiene Program

PURPOSE –

This program is intended to help ensure the health and safety of our employees, those of our sub-contractors, and those of the host sites we work at. Additionally this program will assist us in meeting the host sites commitment to safety and health and in meeting regulatory requirements.

SCOPE

This program applies to all of our activities at our main office / shop locations, and at host sites. Contractors working at any facility that is a part of the Three Rivers Manufacturing Association. It is expected that any subcontractors to us will also have an equally as effective program in place unless we elect to include them under this program.

REFERENCES

- American Conference of Governmental Industrial Hygienists (ACGIH) “Guide to Occupational Exposure Values” and “Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices”
- American Industrial Hygiene Association (AIHA) Qualitative Exposure Assessment Process
- Occupational Safety and Health Administration (OSHA) Technical Manual and Analytical Methods
- National Institute for Occupational Safety and Health (NIOSH) Sampling Guide
- Regulations found under 29CFR 1910
- Regulations found under 29CFR 1926

DEFINTIONS

- **Certified Industrial Hygienist (CIH)** – A professional industrial hygienist who by education, experience, and demonstration of knowledge has satisfied the requirements of the American Board of Industrial Hygiene and ahs been designated a CIH in either the comprehensive practice or chemical aspects of the profession.
- **Exposure Assessment –** Determination or estimation (qualitative or quantitative) of the magnitude, frequency, duration, and route of exposure.
- **NIOSH** - Part of the Centers for Disease Control and Prevention within the U.S. Department of Health and Human Services. Responsibilities include research and recommending occupational health and safety standards.
- **OSHA** – Part of the U.S. Department of Labor; the regulatory and enforcement agency for safety and health for most U.S. business and industrial sectors.
- **Qualified Industrial Hygienist (QIH)** – Individuals by virtue of adequate experience, training, education, board certification or a combination of these factors are competent to provide industrial hygiene related services.

RESPONSIBILITIES

Certified Industrial Hygienist (CIH)

- Assist in the development of the IH program.
- Approve the program as meeting generally accepted IH standards of practice.
- Provide ongoing general IH oversight of the program.
- Conduct annual program reviews of the program.
- Review monitoring documentation.
- Verify personnel conducting monitoring are properly qualified to perform the activities assigned.
- Verify the quality of exposure evaluations and monitoring is acceptable.
- Provide recommendations based on assessments.
- Develop annual exposure evaluation plans.

Qualified Industrial Hygienist (QIH)

- Works under the guidance of a CIH
    - Conduct qualitative and/or quantitative exposure assessments
    - Assists in developing applicable OSHA programs/procedures
    - Verify personnel conducting monitoring are properly qualified to perform the activities assigned.
    - Provide recommendations based on assessments.
    - Develop annual exposure evaluation plans.

Site Supervisors

- Understand the potential health hazards of the work being done and in the areas worked.
- Evaluate these potential health hazards as part of a pre-job safety review.
- Ensure workers are aware of the potential hazards and the controls in place to minimize potential exposures.
- Request assistance from safety or IH personnel as needed in evaluating conditions.

Site Safety Personnel

- Maintain a basic level of IH hazard awareness.
- Evaluate jobs for potential health hazards utilizing prior training, PPE assessments, and exposure evaluations.
- Request assistance from an IH as needed for evaluations or monitoring.
- Ensure controls needed to minimize exposures remain effective.

Site Monitoring Technician (or IH Technician)

- Maintain IH equipment,
- Calibrate equipment per guidelines
- Maintain adequate documentation
- Collect samples and handle afterwards using approved procedures
- Other activities as approved by the CIH

In addition the person should have a basic level of IH hazard recognition. The CIH overseeing the program will verify that this person has the appropriate qualifications to perform the scope of their assigned activities.

Employees

- Understand the potential health hazards of the materials being worked with or around.
- Utilize proper PPE consistent with Hazard Communication and PPE training.
- Report any problems or concerns to the supervisor.

EXPOSURE EVALUATIONS

The Contractor's IH Program shall consist of two major components, a qualitative and quantitative exposure assessment. These assessments will need to be developed by a Certified Industrial Hygienist or a Qualified Industrial Hygienist with CIH oversight to ensure good quality control.

These assessments can be summarized and provided to field personnel as part of their IH hazard awareness training and to assist them in conducting a pre-job safety analysis.

Qualitative Assessments

The Contractor shall use the American Industrial Hygiene Associations'(AIHA) Qualitative Exposure Assessment Process as guide for this section of the program. Contractors shall use the elements listed below and additional information provided in the AIHA guide to develop and document their qualitative assessment program/procedure.

The qualitative assessment will be conducted by a CIH or a QIH under the guidance of a CIH. The process uses the following basic steps:

- A listing of all significant work tasks including work task frequency, duration, and conditions
- Potential chemicals involved for each task.
- Interviews and field observations about each work task made as needed.
- Work tasks grouped into similar exposure groups.
- Develop exposure groups based on exposure potential and chemical / physical hazards
- Develop a risk matrix (example in appendix) to identify high risk vs. low risk task activities.
- A copy of completed qualitative assessments with their ratings is in Appendix –
- Conduct annual review of site work tasks to verify accuracy.
- Conduct a revalidation process every three years for each work task.
    - Reassessments will include a review of past monitoring data from the specific work site as well similar data from other locations.
    - The activities and chemical lists will be re-verified as accurate.
    - A representative number of personnel will be interviewed to ensure conditions have not changed from the past evaluation.
    - Any changes found will be made to the assessment documentation and utilized as part of planning for the next monitoring cycle.

Quantitative Assessments

The exposure monitoring portion of the exposure assessment process is used to verify the qualitative exposure assessment ratings and ensure personnel are adequately protected from potentially hazardous exposures. Monitoring will consist of both an annual plan as well as unplanned monitoring for non-typical activities that may come up during the year, changes in conditions, or if there is a much higher frequency of those activities.

[The OSHA Technical Manual and NIOSH Sampling Guide should be used as references for this section of the program. Contractors shall use the elements listed below and additional

information provided by OSHA and NIOSH to develop and document their quantitative assessment program/procedure.]

- An annual monitoring plan will be developed by a QIH and approved by the CIH overseeing the program. Both full shift, task specific, and STEL monitoring will be done.
  - Annual plan will be based on previous exposure monitoring results and CIH recommendations
- Exposures will be evaluated using the current OSHA PELs or TLVs issued by the American Conference of Governmental Industrial Hygienists (host site IH will specify preference, note that some sites also use the TLVs for noise which calls for different monitoring criteria than OSHA)
- Personnel conducting monitoring will be trained in proper sampling procedures for the monitoring they will be doing and approved by the CIH providing program oversight.
- NIOSH/OSHA Sampling Protocols (include calibration and documentation) will be utilized.
- An AIHA accredited lab will be utilized for lab analysis.
- Employees will be notified of the sample results within 2 weeks of obtaining them (or sooner if an OSHA time frame exists, for example for benzene and hexavalent chromium)
- If samples are collected at a host site results will be provided to the site Industrial Hygienist or Safety contact. These will be sent out no more than 30 days after receipt of the results or as soon as practical if levels exceeds the exposure limits used by the site (ACGIH TLVs or OSHA PELs)
- Control measures will be recommended based on monitoring results using the 95% confidence level (see ACGIH)

Record Retention

- Minimum is to meet OSHA record keeping guidelines

Program Review

- This will be conducted and documented on an annual basis by or overseen by the CIH providing oversight.
  - Suggested performance measures
    - Percent completion of annual monitoring
    - Percent of employees exposed over AL – Air (consider STEL and TWA)
    - Percent of employees exposed over 85dBA as an 8 hour TWA – Noise
    - Number of employees in occupational medical monitoring programs

Reports to Host Sites

The following information will be provided to the host facility IH or designated safety contact if no IH at the site:

- Overall IH Program – initially and after each revision
- Qualitative Assessments – initially as part of overall program and as updated.
- PPE assessments initially and after revisions.
- Monitoring results summary at a minimum on a monthly basis or sooner if air levels are found to be above the TLV or PEL.

INDUSTRIAL HYGIENE RELATED PROGRAMS

[It is the responsibility of each contractor to determine their own program needs and requirements for OSHA compliance and the adequacy of their program.

The host sites have certain expectations for contractors performing work onsite and this list is to help convey those site expectations. This list is not all-inclusive and cannot be relied upon by contractors as their only source of information as to what is required for their own Safety and Health program. OSHA is the primary source and should be consulted along with knowledgeable safety and health professionals in evaluating their programs and in determining additional program needs. **]**

Additional IH related programs have been briefly summarized below. These programs are typically developed into their own separate safety procedure (not all will apply to your company, the list should be customized and should only summarize the program as the complete program would normally be a separate procedure.)

Access to Medical and Exposure Records - Any contractor who has exposure records or medical records relating to exposures must comply with this OSHA regulation. This includes specific requirements on record retention.

Asbestos - Contractors removing asbestos must have a full asbestos program. Other contractors that may come into contact with or work around asbestos must have basic asbestos awareness training as per the OSHA asbestos construction standard. Examples of some work that may trigger this include; removing gaskets, pipe fitting, line inspection thickness readings, scaffold building, insulation removal, riggers, etc., due to the potential for asbestos in old gaskets, piping insulation, transite panels, spray on fireproofing, concrete lines, and in some floor tiles.

Benzene - A contractor with employees potentially exposed to benzene containing material is required to evaluate employee exposure and if it exceeds the Permissible Exposure Limit (PEL) develop a written compliance program. Periodic air sampling and medical evaluations may also be required. (examples may include contractors doing blinding or vessel opening, tank cleaning, spill clean up). Others should at least have awareness training to ensure workers can recognize the potential hazard and understand the health risks.

Bloodborne Pathogens - Contractors with employees who as part of their job are expected to provide first aid must have a written blood borne pathogens program.

Confined Spaces (exposure evaluation portion) - Contractors are required to ensure their personnel are properly protected from excessive exposures in confined spaces. The initial entry permit addresses initial conditions as evaluated by the site, but contractor activities may result in those conditions to change. Contractor programs need to address how those conditions will be evaluated. As an example a welder inside a vessel may generate carbon monoxide, nitrogen dioxide, other gases and a variety of welding fumes. Another one would be a tank cleaner removing sludge. Those materials are not created by the site but by the contractor or they are within the scope of the specialty job the contractor was hired to perform. Methods a contractor may use include: past air sampling for fumes and gases under similar conditions and training of personnel to recognize when those conditions may change. It may also involve periodic checks with special monitoring equipment like NO2 meters, fume particle counters, benzene meters, and photoionization detectors. The basic confined space monitoring meter is only good for those substances it is designed to monitor.

Hearing Conservation - Contractors with employees exposed to elevated noise levels are required to have a hearing conservation program. One part of this program is the exposure assessment of workers to measure their noise exposure. Based upon the assessment, periodic hearing tests and training may be required. The site requires hearing protection to be used in specific areas and for specific tasks. The contractor must make sure other tasks their workers perform do not also require hearing protection. Also certain tasks may generate extremely high noise levels (over 100dBA 8 hr avg) which may require double protection (muffs over plugs). As an example one task where this may apply is arc gouging especially inside a vessel or tank.

Hexavalent Chromium – If work involves chromium containing materials this regulation may apply. Examples include welding, spray painting, abrasive blasting, refractory work involving chromium containing materials.

Hazard Communication - All contractors must have a written HazCom program as all will have, use, or potentially come into contact with chemicals. The program must include employee training (review of OSHA regulation, chemical hazards, how to detect potential over exposures, and company and host programs), labeling of containers, inventory listings, MSDSs on hand for all chemicals (includes material that may generate chemicals like welding rods and metal being welded), informing other contractors of chemical use (including hazards, their exposure potential and how to detect potentially excessive exposure) as well as other elements in the regulation.

Lead - Contractors that perform large-scale lead abatement must have a full detailed lead program. Other contractors that may disturb painted surfaces like cleaning paint off for a weld point or cutting surfaces that may have lead (painted or galvanized) need a basic program addressing those activities. The program includes a lead exposure assessment for each task that may result in exposure.

Methylene Chloride - Contractors using chemicals containing methylene chloride are required by OSHA to evaluate that usage and conduct an exposure assessment.

Personnel Protective Equipment - Contractors with employees exposed to chemical or physical hazards are required to have a written PPE program. This should apply to virtually all site contractors with the possible exception of those with only office staff. This program requires an assessment of tasks that workers may perform and the appropriate PPE needed to provide adequate protection from identified hazards (appropriate PPE must be available including proper sizes). Note that a correctly done JSA should meet the assessment requirement. Specific PPE should be given such as Solvex nitrile glove, it is not acceptable to simply state proper PPE will be used. Additional PPE may include welding flash protection (what shade levels?), welding gloves, chemical gloves, chemical splash suits, slicker suits, splash boots, alky gear, face shields, etc. As part of this a certification needs to be done documenting employees know how to and are using PE correctly.

Respiratory - Contractor employees required to wear a respirator will require a Respiratory Protection program. This includes a medical evaluation, training, fit testing, selection of masks, cleaning, storage, and exposure assessments. If they will not be required to wear a mask but have the option of wearing a disposable nuisance paper type dust mask then only a minimal program and training is needed.

OTHERS

APPENDIX A
QUALITATIVE ASSESSMENT OF SIGNIFICANT ACTIVITIES

ACTIVITY	FREQUENCY	HAZARDS	RATING	DATE

APPENDIX B
ASSESSMENT RATING MATRIX

This section provides a summary of the qualitative exposure assessment process being used. Included are the exposure ratings (using the 95% upper confidence level), agent hazard categories, and the overall risk matrix. The specifics for this section come from the CIH assisting with the program and follow the general AIHA Exposure Assessment guidelines. Some companies may want to develop a rating system and matrix slightly different than the AIHA one using other recognized guidelines.

HAZARD RISK	EXPOSURE POTENTIAL RATINGS HIGH			LOW
HIGH				
LOW				

APPENDIX C
ANNUAL MONITORING PLAN

ACTIVITY	AGENT	DURATION	# SAMPLES	COMPLETE

APPENDIX D
SAMPLE DATA COLLECTION SHEET

Insert a copy of the sample collection data sheets your company will be using.

APPENDIX E
NOTIFICATION TO SITE OF SAMPLE RESULTS

(Most sites will want just a summary of the sample information instead of the detailed records and personnel employee information that each company will maintain as an employee exposure record. The actual sample result form that will be used should be inserted here.)

SAMPLE DATE		**WORK AREA**		**JOB DESCRIPTION**	
SAMPLE TIME (min)		**SAMPLE ON TIME**		**SAMPLE OFF TIME**	
JOB TITLE		**ACTIVITY**		**PPE**	
AGENT		**RESULT**		**METHOD**	
COMMENTS					

APPENDIX F
EQUIPMENT CALIBRATION

This section contains the specific calibration procedures to be followed for the various types of monitoring equipment. Calibration of monitoring needs to be done both prior to sample collection and following collection. Certain equipment like noise dosimeters and calibrators must be sent in to a calibration lab on a periodic basis (generally annually) for a full calibration. The frequency and procedures for that should be included in this section. While a complete copy of the OSHA sample procedures manual is not needed a brief summary of the procedure should be provided, especially where monitoring techs will be doing the work.

APPENDIX G
SAMPLE HANDLING

This section contains the company or site specific procedures for handling samples. Included would be maintaining a chain of custody, proper sealing of media immediately following sample collection, storage and shipping of samples. AIHA accredited labs being used and their addresses should also be included.

APPENDIX H
OTHER ….