IH60500
Planning, Analyzing, Reporting & Retaining Results of Exposure Monitoring

Contents

1.0 Purpose & Scope
2.0 Responsibilities
3.0 Definitions
4.0 Prerequisites
5.0 Precautions
6.0 Procedure
7.0 Implementation & Training
8.0 References
9.0 Attachments
10.0 Forms
11.0 Documentation

BROOKHAVEN NATIONAL LABORATORY

Industrial Hygiene Field Service Report

Employee Exposure to XYZ in Building 1234

April 44, 2099

Sample

1.0 Purpose & Scope

This document describes the SHSD Industrial Hygiene Groupôs (IHG) personal exposure monitoring planning and hazard analysis report procedure. This document describes the SHSD Industrial Hygiene Group (IHG) exposure monitoring plan and risk ranking strategy. It provides standards of performance for sampling and report content. Its purpose is to establish a policy to:

- Ensure high quality assessment reports
- Ensure rapid dissemination of information to appropriate groups,
- Ensure that all needed actions are taken.
- Comply with data recording/recordkeeping requirements for critical records.

The goal of the procedure is a uniform protocol for documentation of assessments of personnel exposure to industrial hygiene hazards. It also provides a system for characterizing personnel when sampling results indicate no exposure potential exists (i.e. Negative Exposure Assessments (NEAs)).

2.0 Responsibilities

2.1 **Program Administration:** This procedure is administered through the SHSD Industrial Hygiene Group.

2.2 ***Industrial Hygiene Professional:*** The *Industrial Hygiene Professional* of SHSD and other BNL organizations are to conduct or supervise industrial hygiene hazard assessments and personal exposure monitoring. These *IH Professionals* are responsible for:

- Planning the appropriate sampling strategy.
- Interpreting, reporting, and documenting personal exposure monitoring in accordance with the requirements of this procedure, other appropriate SOPs, and generally accepted professional standards and practices.
- Ensuring a timely, quality report is prepared that documents the exposure, evaluates the relevance to exposure standards, and recommends protective and corrective actions.
- Ensuring that the appropriate data is correctly and completely entered into the BNL IH exposure monitoring database (i.e. *Compliance Suite®*).
- Ensuring that original records of sampling and analysis enter the SHSD record filing system.

2.3 ***Industrial Hygiene Technician (Sampler)*:** The industrial hygiene technician conducts industrial hygiene personal exposure monitoring under the direction of his/her organizationôs *IH Professional.* The sampler is responsible for collecting personal exposure monitoring samples in accordance with the guidance of the *IH Professional* and the requirements of all SOPôs pertinent to the particular monitoring requirements (i.e. Chain of custody, equipment check in/out, equipment operation, recordkeeping, etc.).

2.4 ***Compliance Suite® data entry:*** The organization of the person conducting the sampling is responsible for entering complete and correct data into the BNL IH exposure monitoring database (i.e. *Compliance Suite*). This task may be assigned to one or more individuals who act as the data entry person for an organization, however, it remains the responsibility of the line management of the *IH Professional* to ensure this task is fulfilled within 10 business days of the receipt of sampling results or the end of the sampling event involving direct reading meters.

3.0 Definitions

BNL IH exposure monitoring database: A single, unified electronic database that compiles all industrial hygiene sampling records taken at BNLôs Upton location. The current database is a BNL licensed copy of *Compliance Suite* maintained by the SHSD IH Group.

Compliance Suite®: a database used to track completed monitoring & schedule next monitoring.

Similar Exposure Group (SEG): A group of individuals with a pattern of exposure that is nearly identical. These workers perform the same tasks in relationship to the inclusion in the SEG. These workers are grouped together for the purpose of inclusion in an exposure control program. Monitoring on one individual within an SEG is representative of the exposure expected for any member of the group.

4.0 Prerequisites

See qualification in Section 7.

5.0 Precautions

Personal Protective Equipment: The use of personal protective equipment to protect personnel when preparing exposure assessment reports is not typically required. The collection of sampling data may expose workers to hazards. Follow all precautions in the corresponding SOP on sampling for specific hazards.

6.0 Procedure

6.1 **Equipment:** Typical file supplies (including: file cabinets, folders, computers, electronic image scanners, and electronic media).

6.2 ***PLANNING:*** **Exposure Assessment Sampling Strategy:** Documented exposure assessments for chemical hazards, physical hazards, biological agents, and ergonomic stressors are to use recognized assessment methodologies, sample collection techniques, calibrated equipment, and accredited IH laboratories for analysis (as appropriate). The assessment methodology adopted by SHSD IH Group is located in ***Attachment 9.10.*** This plan is used to rank hazards and plan the scheduling of hazards on a yearly basis. The BNL plan is adapted from the *AIHA Strategy for Occupational Exposure Assessment* which describes strategies for the collection and interpretation of occupational exposure monitoring data.

- Record the need of sampling in the IH Exposure Monitoring Plan and Monitoring Scheduler maintained on the SHSD shared drive.
- The BNL policy on sampling strategies to be used on the day of sampling is specified in ***Attachment 9.1*** *Fundamentals of the BNL Exposure Assessment Strategy*.

6.3 ***PREPARATION OF A FORMAL REPORT*** **on the exposure monitoring or hazard assessment.** The *IH Professional* will ensure the preparation of a summary report of the exposure monitoring or hazard assessment that contains, at a minimum, the contents specified in ***Attachment 9.2*** *Report Content Requirements.* The formal report needs to be prepared regardless of the use of ***Form 10.1 5-day Notification form*** or equivalent; and it is highly desirable for it to be issued <u>within 30 days</u> of

receipt of the sampling results and the conclusion of the event being sampled (on multiple day events).

Summary of Reporting Timelines (in Business Days)

Day	Direct Reading Meter
0	End of Sampling Event
5	Employee Notification Deadline
10	Compliance Suite Entry
30	Formal Assessment Report or Compliance Suite Report

Day	Laboratory Analysis
--	End of Sampling Event
0	Lab Results Received
5	Employee Notification Deadline
10	Compliance Suite Entry
30	Formal Assessment Report or Compliance Suite Report

6.3.1 **Initial Notification of Employee Monitoring Results for all exposure monitoring:** Regardless of exposure level, *IH Professional* is to complete hazard assessments in a timely manner and notify affected employees and their line management <u>within 5 business days</u> using ***Form 10.1 5-day Employee Notification form,*** or equivalent. Also acceptable is the printout of sampling report from Compliance Suite or completion of a formal exposure assessment report containing the information in the Attachments of this procedure. ***Attachment 9.4*** *Justification of Employee Monitoring Notification Requirements* provides the documentation for the BNL employee notification policy.

6.3.2 **Determining additional protective action when Employee Monitoring results indicate an overexposure has occurred:** When an over-exposure has occurred, the *IH Professional* will determine the appropriate corrective actions that should be done to reduce exposure levels to below the Occupational Exposure Limit. In addition, the IH Professional is to carefully review the following attachments and take the appropriate action, triggered by the exposure level to the employee, to meet:

- OSHA Training & Medical Surveillance Requirements (Attachment 9.11),
- DOE ORPS [Occurrence Reporting and Processing System] (Attachment 9.6)
- DOE 10 CFR 851 NTS Reporting Thresholds (Attachment 9.7)

6.3.3 **Preparing a Negative Exposure Assessment (NEA), when applicable:**

- When quantitative monitoring determines employee exposure to be less than Occupational Exposure Limits (i.e. no significant worker exposures above all ACGIH & OSHA TWA-8, STEL, Ceilings, Action Levels, and Excursion Limits) and the operation is often repeated under identical circumstances of work patterns, work methods, work controls, work

duration and environmental factors, a Negative Exposure Assessment may be generated.

- A Negative Exposure Assessment can not be based on sampling data that is more than 24 months old (more frequent if an OSHA/DOE Standard requires more frequent monitoring or 12 months for Asbestos Abatement covered under 29CFR1926.58).

- An existing NEA, which is based on sampling data that was generated more than 24 months before, will be considered valid if the operation has not changed and at least one new sampling event is monitored each year and the results are consistent with previous results.

- When a published study presents data that is identical to an exposure scenario at BNL, that study can be used to make a ñNegative Exposure Assessmentò for BNL operations. At least one additional sampling event must be monitored at BNL and the results must be consistent with published data. Every 12 months at least one additional sampling event must be monitored and the results must be consistent with previous results.

- The sampling data must be obtained using a worker worn exposure sampling devise, unless worker worn sampling device is not technologically available. The sampling device is to have been worn on the workers body in the manner that represent the likely route of exposure (in the breathing zone for inhalation hazards, by the ear for noise hazards, and on the body facing the source for non-ionizing radiation sources.

- A Fixed Breathing Zone/Exposure Zone Sample is only to be used for determining a NEA when the only feasible sampling technique is not portable and can not be worn by the worker. This type of sample must measure worker exposure potential at the location where the worker is located during exposure.

- Area Samples alone are not an adequate basis for a NEA. This type of sample can be used to strengthen the conclusions that can be drawn from personnel sample and add more detail to determine the exact route and pattern of exposure.

6.4 ***Maintaining Written Documentation:*** The *IH Professional* is to maintain documentation for all personnel samples collected at BNL in the following manner:

6.4.1 **Retaining written document(s):**

- The *original* of laboratory analysis reports, exhibits, photos, sketches, sampling sheets, etc is to be provided to the SHSD IHG *Exposure Monitoring Record Custodian.* The SHSD IHG *Exposure Monitoring*

Record Custodian will issue a unique filing number to the sample documentation.

- The *original* of final assessment reports is to be provided to the SHSD IHG *Document & Record Custodian.*
- The official (original) copies of all records are to be kept by the SHSD IHG *Exposure Monitoring Record Custodian* and the *Record and Document Custodian* in a manner approved by BNL record retention policy and in compliance with OSHA and DOE regulations.
- The *Sampler* and *IH Professional* may keep unofficial copies of the files for personal reference. These are to be marked ñCOPYò.
- Store electronic versions of sampling forms and formal reports on the SHSD Shared Drive

6.4.2 **Distribute a summary of the exposure results to OMC** that provides the following data: Name(s) and BNL# of employee(s) represented by the monitoring, the TWA-8 results, and the ACGIH and OSHA occupational exposure limit value. (Note: the 5-day Notification form suffices in the information provided.)

6.4.3 **Distribution of Copies to Responsible Individuals:** For all personal exposure monitoring hazard analyses, the formal report is to be distributed**.**
Addressed to: Line supervisor of employee(s)
Copies to:

- Affected employees (personnel monitored and those represented by the monitored employees),
- Department Chair and Division Manager,
- IH Group Record Custodian (original),
- Facility Support Representative,
- ESH coordinator (for F&O Directorate, also a copy to ESHT&Q at Bldg. 185)and
- Any other responsible party requesting a copy as authorized by OSHA or DOE regulations.

6.5 ***Maintaining Electronic Documentation:*** The *IH Professional* is to maintain documentation for all personnel samples collected at BNL in the SHSD shared Drive in: *2_Industrial Hygiene* folder; *_ih_data* folder.

6.6 ***Electronic Database Entry* of sampling results (Compliance Suite) [See Attachment 9.5]:**

6.6.1 Open Compliance Suite, enter the , start the page. (Access to Compliance Suite requires a password issued by SHSD IH Group.). [The *BNL Noise Data Entry Manual* can be used for more details on the screen format and data entry technique. Manual is available on the SHSD SOP page.]

6.6.2 Select the type of sample (e.g.: noise, air, wipe/bulk, or other). For noise samples, enter data and results following the procedures detailed in the noise manual. For chemical or other types of samples, enter sample data in similar fashion.

6.6.3 For all samples, scan the field sheets, analytical reports, and other documents. Save these files and attach to the sample as indicated in the noise manual. The files must be maintained in the *cs-documents* folder or they will not be kept available to Compliance Suite.

6.6.4 Validate all sample data entered for completeness and accuracy.

6.6.5 Select the page. For noise enter survey information, results, recommendations, and conclusions as detailed in the noise manual. For chemical or other types of samples enter survey information, results, recommendations, and conclusions in similar fashion.

6.6.6 For surveys, attach the field sheets, analytical reports, and other documents. Note: It is not necessary to create new documents. These are the same files saved for the samples. This step just attached the files to this survey.

6.6.7 Validate all survey input for completeness and accuracy.

6.6.8 Use the icon from the page to print the report. The report is not saved in Compliance Suite but is generated each time the report icon is activated. To save the report, use the icon on the print page.

7.0 Implementation and Training

Qualification Criteria: Only individuals who have knowledge of this procedure and extensive experience in IH hazard assessments or certification in industrial hygiene will be qualified to perform the assessments described in this procedure. Qualification criteria for any organization using this SOP:

7.1 All work under this SOP shall be performed by persons who have demonstrated the competence to satisfactorily perform the tests as evidenced by experience and training to meet the qualification criteria set in HP65100 *BNL SHSD Training & Qualification.*

7.2 BNL Training & Qualification Program on principle of planning, sampling and reporting on IH hazard assessments: Personnel are to meet the performance measures set forth in ***Form 10.4*** *JPM/Qualification.* This qualification is to be completed on a three year cycle.

8.0 References

8.1 AIHA *Strategy for Occupational Exposure Assessment.*
8.2 SBMS ORPS.
8.3 OSHA, DOE requirements for IH hazards.
8.4 ACGIH TLV booklet.

8.5 10 CFR 851 NTS Reporting Thresholds: Available Online (04/13/2006)
8.6 DOE G 440.1-3: DOE Implementation Guide for Use with DOE Order 440.1: Occupational Exposure Assessment.

9.0 Attachments

9.1 *Fundamentals of the Planning Exposure Assessments Sampling*
9.2 *Report Content Requirements*
9.3 *NEA Report Content*
9.4 *Justification for IHG Policy of 5 day Notification form*
9.5 *Instructions for Saving Electronic Report Documents to the SHSD Shared Drive*
9.6 *ORPS Reporting Triggers*
9.7 *10 CFR 851 NTS Reporting Thresholds*
9.8 *OSHA Criteria for Reducing Exposure based on PPE*
9.9 *Training & Medical Surveillance Requirements*
9.10 *Monitoring Plan & Sampling Strategy*

10.0 Forms

10.1 *5-day Employee Notification of Monitoring Results form*
10.2 *Activity During Sampling form*
10.3 *Direct reading Instrument form*
10.4 *Job Performance Measure- HP-IHP-60500*

11.0 Procedure Documentation

Development		
PREPARED BY: *(signature and date on file)* J. W. Peters Date: 07/15/04	REVIEWED BY: *(signature and date on file)* R. Selvey Date: 10/06/04	APPROVED BY: *(signature and date on file)* R. Selvey; IH Group Manager Date: 10/06/04
ESH Coordinator/ Date: *none*	Work Control Coordinator/ Date: *none*	SHSD Manager / Date *none*
QA Representative / Date: *none*	Training Coordinator / Date: *none*	S&H Representative: *none*
Facility Support Rep. / Date: *none*	Environ. Compliance Rep. / Date: *none*	Other: *none*
ISM Review - Hazard Categorization ☐ High ☒ Moderate ☐ Low/Skill of the craft	Validation: ☐ Formal Walkthrough ☐ Desk Top Review ☐ SME Review	Implementation: Training Completed: tracked in BTMS Document Control: 06/01/07

Revision Log
Purpose: Periodic review; Clarify/enhance procedural controls Changed resulting from: improvement action Section/page and Description of change: Minor grammatical text revisions throughout the document. Significant changes to qualification criteria. Major revision to Attachment 9.5. Reviewer/Date: *Robert Selvey 10/13/04*(
Purpose: Periodic review; Clarify/enhance procedural controls Changed resulting from: improvement action Section/page and Description of change: Significant changes to qualification criteria section 7 to delineate SHSD specific requirements for other organizations generic requirements. Reviewer/Date: *Robert Selvey 01/04/05*

Purpose: Periodic review; Clarify/enhance procedural controls Changed resulting from: employee comments during the training session of 08/19/05 Section/page and Description of change: Additions to the text in Section 6 and 7 were made. Changes help clarify passages but do not add or delete requirements or processes. Attachment 9.1 and 9.2 were inverted in order to follow the implementation process. Attachment 9.1 was expanded for clarity. Attachment 9.2 was corrected for minor text errors. The SOP Title was expanded to include ñPlanningò which is a critical use of this document that the original title did not describe. Reviewer/Date: R. Selvey 08/19/05 (signature on file); J. Peters 08/22/05
Purpose: Periodic review; Clarify/enhance procedural controls Changed resulting from: improvement action Section/page and Description of change: Revised Section 7 training requirements. Updated Section 10 to new format. Reviewer/Date: R. *Selvey 10/31/05*
Purpose: Clarify/enhance procedural controls Changed resulting from: improvement action Section/page and Description of change: Revised minor errors in Section 7 training requirements. Updated Attachment 9.5 JPM to allow Comprehensive Practice and Limited Scope Qualifications. Reviewer/Date: R. Selvey 12/30/05
Purpose: Clarify/enhance procedural controls Changed resulting from: improvement action Section/page and Description of change: Revised Section 7 to clarify IH Professional and Technician education requirements. Updated Attachment 9.5 JPM to eliminate specifics of the education requirement to avoid redundancy with Section 7. Added Step 6.4 on over exposure actions. Reviewer/Date: R. Selvey 01/25/06
Purpose: Clarify/enhance procedural controls Changed resulting from: Revision based on comments from training class Section/page and Description of change: . Minor changes to Section 2.4 and 2.5. Addition to Section 6 for OMC notification and storage of data electronically. Minor typo changes in Attachment 9.1 (Changes marked with right margin bar. Reviewer/Date: *R. Selvey 01/31/06*
Purpose: Clarify/enhance procedural controls Changed resulting from: improvement action Section/page and Description of change: Added Attachment 9.5. Reviewer/Date: *R. Selvey 02/03/06*
Purpose: Clarify/enhance procedural controls Changed resulting from: improvement action Section/page and Description of change: Added ñHierarchy of Controlsò to Attachment 9.2 to cover 10CFR851. Reviewer/Date: R. Selvey 05/26/06 (signature on file)
Purpose: Clarify/enhance procedural controls Changed resulting from: Federal, State and/or Local requirements Section/page and Description of change: Rev9: Added to the distribution list for the reports in Section 6.10 to ensure the organization manager is knowledgeable of his/her duty to correct unsafe conditions. Reviewer/Date: *R. Selvey 10/16/06*
Purpose: Clarify/enhance procedural controls Changed resulting from: improvement action Section/page and Description of change: Rev10: Document Control # and Dates added to attachments. Re-order Attachment 9.4 and 9.5 to improved document control revision on new 9.4. Reviewer/Date: *R. Selvey 06/01/07*
Purpose: Clarify/enhance procedural controls Changed resulting from: Corrective/preventive actions to non-conformances (Plant Engineering 12592) Section/page and Description of change: Rev11: Added text on distribution to Section 6.12. Updated link to HP65100 from IH51300 Training and Qualification SOP. Reviewer/Date: *R. Selvey 03/17/08*
Purpose: Clarify/enhance procedural controls Changed resulting from: improvement action Section/page and Description of change: Rev12: Major re-write that combined IH60500, 60300 and 60600. Shortened the text on Section 7 for clarity. Added the Attachments from the merged SOPS. Revised Attachment 9.9 and 9.12. Reviewer/Date: *R. Selvey 09/09/09*
Purpose: Clarify/enhance procedural controls Changed resulting from: improvement action Section/page and Description of change: Rev13: Merger of IH60100 Added the Attachments from the merged SOP. Reviewer/Date: R. Selvey12/16/11
Purpose: Clarify/enhance procedural controls Changed resulting from: improvement action Section/page and Description of change: Rev14: Revised Attachments 9.4, 9.6, 9.7 and 9.8 to remove confusion in wording. Reviewer/Date: R. Selvey01/06/12

Attachment 9.1
Fundamentals of the Planning Exposure Assessments Sampling

A monitoring sample typically has one characteristic in each of these categories:
- Initiators: Baseline for Routine Events [Proactive], Periodic for Routine Operations [Proactive], or Complaint/Special Event Triggered [Reactive]
- Sampling Location: Personnel (worn on worker), Fixed location (Area).

I. Initiators:

Routine operations are to receive a baseline hazard assessment with periodic monitoring as appropriate to ensure acceptable conditions. Baseline and periodic monitoring parameters/schedules are determined by the IH Professional providing service to an organization. This establishes exposure potential during routine, non-upset conditions.

Non-routine work activities (Complaint or Special Event) are to receive individualized IH review (work planning). This can establish exposure potential during infrequent events or upset conditions.

Negative exposure assessments- Where no significant worker exposures are found on frequently conducted operations, when possible, the results of sampling are used to prepare assessment statements that can be used for work planning on future operations meeting the exposure scenario.

II. Sampling types

A. Personnel Sample: The preferred sampling type to measure worker exposure potential is a personnel sample and should be used whenever possible. This sampling technique involves a battery operated portable sampling pump and collection media or a direct reading logging dosimeter. In both cases, the sampling device is worn on the workers body in the manner that represent the likely route of exposure (in the breathing zone for inhalation hazards, by the ear for noise hazards, and on the body facing the source for non-ionizing radiation sources. See the specific IH SOP for sampling on the sampling technique for more details.

B. Fixed Breathing Zone/Exposure Zone Sample: When the sampling technique is not portable and can not be worn by the worker, then the next best approach is to measure worker exposure potential at the location where the worker is located during exposure. This sampling technique involves a portable sampling pump and collection media or meter placed at the location in space where the workerôs body receives the route of exposure (in the breathing zone for inhalation hazards; at ear level for noise hazards; and at the body trunk level for non-ionizing radiation sources). See the specific IH SOP for sampling on the sampling technique for more details.

C. Area Samples: Other samples strengthen the conclusions that can be drawn from personnel sample and add more detail to determine the exact route and pattern of exposure. These include:

- **Building Occupant/By-stander sample:** Fixed samples that measure the exposure potential for personnel not involved in the operation and that may not be permanently assigned to the area of sampling. These typically would be fixed sampling devices set in the location in space that transient personnel might frequent during the operation for which personnel and other area samples are being taken.

- **Clean Area (Control):** an area sample taken in an area known to be free of the hazard, to serve as a negative check on the sampling process and laboratory analysis. It may also determine unexpected ambient hazards not previously known in the area.

- **Source sample:** An area sample placed close to the source of the hazard. This serves as a positive check on the sampling method and laboratory analysis or meter operation.

- **Outdoor sample:** An area sample taken when the source is believed to be from an indoor source to verify that there are no contributors to exposure entering the area from other sources.

When **area measurements** are used to characterize personnel exposure or determine the need for a quantitative personnel exposure monitoring, the following items are to be evaluated: Strength of evidence, Likelihood of exceeding the OEL, Potential adverse health effects, Limits of effective or feasible risk management actions, and the need for further data or better understanding of health effects/outcomes.

Attachment 9.2
Report Content Requirements

The following information is to be incorporated into all personal exposure monitoring hazard assessment reports. Report attachments may be utilized to fulfill the documentation requirements. For instance, the chain of custody, calibration sheets, and laboratory results will provide some of the information required.

The sampling record must document:

- Essential aspect describing the work & event: Who, What, When, Where, Why
- Essential aspect describing the sampling results: How much, When, Where, Why
- Analysis of Compliance with regulatory requirements
- Needed corrective actions based on the results

Item Name	Description / Example of appropriate level of documentation
1. Assign the Project Number (completed by Sampler)	
Survey Title	One line description of the survey event that identities the hazard and location. Example: *Lead surface wipe sampling in Building 120*
Survey #	Unique identifier number used by sampling organization to track field sampling work.
2. Describe the Event (completed by Sampler)	
First & Last Name of Employee(s) & Life Numbers	Identify person sampled and other potentially exposed personnel or personnel represented by sampling data (i.e. similar exposure group). Example: *This sampling was done on plumber John Doe (BNL 9999). Also represented on this day by the results was his companion plumber on the task Mary Smith (BNL 8888). Also represented by this type monitoring are other plumbers of Plant Engineering who are assigned to periodic maintenance of the XYZ unit boiler.*
Supervisor	Name of management/supervisory personnel responsible for the operation. Example: *John Doe of EENS is the owner of the equipment. Mary Smith is the supervisor of work group assigned to perform the episodic replacement of the unit's window.*
Task Done	Describe the operation and associated work activities/tasks Example: *The work consisted of wet rag wiping of 124 lead brick to remove oxidation, wrapping them with plastic tape, and stacking the bricks on a pallet for shipment.*
Hazard	List the types and sources of potential health hazards (e.g., chemical, physical, or biological agents and ergonomic stressors). Provide the exact name of chemicals/hazards sampled and other hazards represented by the sampling.
Date of sampling	mm/dd/yyyy
Time of Day	Military Time that the work occurred.
Task frequency	State whether the sampling captures an everyday occurrence, routine event, periodic event, or one-time event. State the frequency of occurrence. Example: *This was a one time event during the preparation for demolition of the building.*
Task Normalcy	State whether the sampling captures the route of exposure on a typical day or an emergency, spill, accident, unplanned event, etc. Example: *This operation represents a frequent event in the maintenance cycle of the pump. It is performed typically every 40 to 60 days in a similar manner to the work done during sampling.*
Exposure Pattern Normalcy	State whether the exposure represents typical exposure patterns, in terms of frequency, duration, intensity, etc. Example: *This operation was conducted in a similar manner to the way the work is typically done. However, only two workers were used on this day and usually three workers participate. Exposure potential may be higher than typical.*
Building	BNL Building #
Location	Location within the building such as room number. Provide additional detail on area

Item Name	Description / Example of appropriate level of documentation
	within a room as appropriate.
Organization Name	2-digit abbreviation
Indoors/outdoors	Does exposure occur in a closed in area or outdoors. If outdoors, state the weather during sampling, including temperature and wind speed and direction). Example: *This operation was conducted outdoors on a very windy day. The workers were upwind of the source so exposure potential may be lower than typical.*
Worker location	State if the worker(s) were sampled at the location of typical operation. Example: *The operator was stationed at her typical position throughout the monitoring period. Exposure potential is expected to represent typical work conditions.*
By-stander Representation	State if the monitoring represents by-stander exposure
Compounding Environmental Factors	Describe significant environmental conditions/factors that could affect worker exposure potential, and/or exposure sampling or measurements. Example: *This operation was conducted on a very hot day. A fan was used to cool the worker, and the wind from it may cause excessive dust so that exposure potential may be higher than typical.*
Sample Location	List the specific location of the sample. Example: *Sample number 2 was taken four inches from the source and is not representative of worker exposure. Sample 4 and 5 were worn by worker on their lapel and represent their exposure and those of other worker on other days doing this job.*
Sketch or photo	A hand drawn sketch, floor plan with sampling locations, or digital photo of the sampling area is to be included.
Exposure Sampling Period	Describe if the full exposure event was sampled (all the time of exposure) or which portion was sampled. Describe if the sampling includes time when no exposure would be expected to occur (such as set-up or break-down of controls). Example: *The sample pumps were worn during the containment set-up and during the sand blasting. Pumps were worn during the entire blasting period and were removed prior to worker decontamination.*
Sample Duration- Time On/ Sample Duration- Time Off	Time of day to the nearest minute that the sampling pump was turned on and off. Multiple times should be recorded if the pump was turned off during breaks, lunch, or other periods.
3. Describe the Sampling Parameters and Analysis Technique (on media sampling): (Completed by SHSD IH Lab)	
Calibration	State the sampling instrument calibration data.
Method	State the sampling and analytical methods and protocols used (e.g., those specified by OSHA or NIOSH or other equivalent methods)
Laboratory	State the analytical laboratory used.
Results	Provide the results of exposure monitoring/ sampling measurements to the IH Professional or Sampler
4. Analysis of Compliance: (Completed by IH Professional)	
Worker Protection status & future needs	Provide supporting data and assumptions (e.g., consideration of respiratory protection or other PPE attenuation factors). Example: *The workers wore full Level C suits, with gloves and boots. Skin route of exposure would be minimal. A full face APR with OVC was worn during the spraying operation. Based on the sampling results, this level of PPE should continue to be used on future operations.*
OEL	Identify the applicable occupational exposure limits/industrial hygiene standards, including ACGIH, OSHA, and DOE Exposure Standards and Action Levels.
Relevance to OELs	Compare personal exposure levels against recognized occupational exposure standards, e.g., 8-hour time-weighted average (TWA) concentration, short-term exposure level

Item Name	Description / Example of appropriate level of documentation
	(STEL), peak or ceiling concentration, or average sound pressure level, dBA, and Action Levels. Document if the sampling and/or operation was a partial day event Describe the impact of the sample duration on the operation if it was extended to a full day- i.e. would exposure be in compliance or would over-exposure occur.
Exposure controls	Interpret monitoring/sampling results worker exposure level(s) relative to applicable occupational standards. Note: where personal protective equipment, such as respirators, hearing protectors, etc., was used by workers to attenuate exposures, the documented record should report the measured or estimated unattenuated level(s) of potential personal exposure, along with the type and protection/attenuation factor of the PPE worn. Example: *The workers wore Level C suits, with PAPR, gloves and boots. Based on the sampling results, the workers level of exposure exceeded the PEL. While the PPE would have eliminated some actual exposure, the operation is considered out of compliance with the OEL and corrective actions to reduce employee exposure are needed.* Example: *The workers wore ear plugs. Determine the adjusted NRR for the actual brand of equipment used and discuss the impact on the exposure.*
Controls in place at time of sampling	Describe the impact of exposure hazard controls (e.g., engineering, administrative, work practice, personal protective equipment) in-place during sampling. Example: *The operation was administratively controlled during this trial period to restrict the work to 2 hour exposure or less. Because of this time limitation on exposure, the OEL was not exceeded. However, if the Administrative limit was not in place and exposure had occurred for 6.5 hours or more, the OEL would have been exceeded. A permanent limitation on exposure to 4 hours or less is required.*
5. Describe Expected actions of worker and management (Completed by IH Professional)	
Needed Control Measures	Describe any recommended, additional control measures, (including engineering, administrative, work practice controls, and/or personal protective equipment), to reduce worker exposures to within acceptable exposure levels and as low as practicable. Differentiate between long-term and interim control measures. Recommendations should be for hazard controls based on the following hierarchy: • Elimination or substitution of the hazards where feasible • Engineering controls where feasible • Work practices and administration controls that limit worker exposures, and • Personal Protective Equipment
Need for Medical Surveillance	Determine if the OSHA or BNL trigger has been exceeded. State if medical surveillance is required based on the sampling results.
	If medical surveillance is required, inform supervision to identify all the exposure population and to require medical evaluation. Example: *The operation has the potential to expose workers above the Action Level. Identify any workers who have the potential to do this operation for 30 or more days in any 365 period and have them evaluated by the OMC under the medical surveillance protocol.*
Need for new or additional Training	State if additional training is needed for the exposed workers. Example: *Worker # 2 had a total dose exceeding the Action Level. The worker needs renewed training in use of ear muffs and plugs and should retake the noise and hearing conservation class.*

Item Name	Description / Example of appropriate level of documentation
	If training is required, inform supervision to identify all the exposure population and to require training. Example: *The operation has the potential to expose workers above the Occupational Exposure limit or Action Level. Identify any workers who have the potential to do this operation for 30 or more days in any 365 period and have them trained as per BTMS.*
Other	Describe any other pertinent factors, hazards, controls, precautions, etc.

Sample, See the IH Web Page for an Editable version

Attachment 9.3
Negative Exposure Assessment Report Content

The following information is to be incorporated into a Negative Exposure Assessment (NEA) report.

1. NEA Title: One line description of the operation that identities the hazard and work conditions.
   - Example: *Lead surface wipe sampling.*

2. Expiration Date/ Renewal Date: The date the sampling data will reach two year maturity. If additional sampling data is collected that verifies the NEA is still valid, then the Expiration Date can be extended by Renewal for two years (except 1 year for Asbestos and other OSHA Standards requiring annual monitoring)

3. Hazard: List the type and sources of potential health hazards (e.g., chemical, physical, or biological agents and ergonomic stressors). Provide the exact name of chemicals/hazards sampled and other hazards represented by the NEA.
   - Example: *This NEA covers the routine handling of up to 100 lead bricks or 30 minutes of handling of lead bricks. The bricks covered by this NEA would be characterized as non-coated and heavily oxidized.*

4. Task Done: A description of the operation and associated work activities/tasks.
   - Example: *The work consists of wet rag wiping of up to 100 lead bricks to remove oxidation, wrapping them with plastic tape, and stacking the bricks on a pallet for shipment.*

5. Task frequency & normalcy: State whether the NEA describes the route of exposure on a typical day or an emergency, spill, accident, unplanned event, etc.
   - Example: *This NEA represents a frequent event in the maintenance cycle of the pump. It is performed typically every 40 to 60 days in a similar manner to the work done during supporting sampling.*

6. Exposure Pattern Normalcy: State the exposure patterns, in terms of frequency, duration, and intensity that the NEA represents. The NEA must include a statement that no other exposure to the hazard can occur on the day of exposure of an operation covered by the NEA.
   - Example: *This operation is conducted in a similar manner each time, only two workers are in the exposure zone. Exposure can be higher when the fan is not running and this NEA does not represent that scenario.*

7. Indoors/outdoors: Describe in the NEA if it is applicable to indoor areas, outdoors, or both. If outdoors, state the weather represented in the NEA, including temperature, wind speed, and wind direction relative to the worker).
   - Example: *This operation is conducted outdoors. The NEA is not applicable on a very windy day or when the workers can not be upwind of the source.*

8. Compounding Environmental Factors: Describe significant environmental conditions/factors that could affect worker exposure potential and negates the NEA.
   - Example: *This NEA is not applicable if the operation is conducted on a very hot day. A fan used to cool the worker may cause excessive dust so that exposure potential may be higher than typical.*
   - Example: *This NEA is not applicable if the operation is conducted indoors.*

9. Worker location: State the worker(s) required or typical operation.
   - Example: *The operator must be stationed at the control panel throughout the work period. Any other location is not represented by this NEA.*

10. Worker Protection needs: State required PPE (e.g., respiratory protection or other PPE). Describe any required additional control measures, (including engineering, administrative, work practice controls, and/or personal protective equipment), to reduce worker exposure.

- Example: *The workers must wear Level C suits, with gloves and boots. A full face APR with OVC must be worn during the spraying operation.*

11. OEL: Identify the applicable occupational exposure limits/industrial hygiene standards, including ACGIH, OSHA, and DOE Exposure Standards e.g., 8-hour time-weighted average (TWA) concentration, short-term exposure level (STEL), peak or ceiling concentration, or average sound pressure level, dBA, and Action Levels. Provide a quantified rate of exposure, i.e. determine personal exposure level per unit time of exposure. Determine the length of time that the work can be conducted with worker exposure level in compliance with recognized occupational exposure standards, e.g., 8-hour time-weighted average (TWA) concentration and short-term exposure level (STEL). Describe the impact on exposure if the work duration is a full day.
    - Example: *If this operation is done for 30 minutes or less.*

12. Need for Medical Surveillance: State if medical surveillance is required.

13. Need for new or additional Training: State if additional training is needed for the exposed workers.

14. List all sampling data and reports utilized in the exposure determination, including the chain of custody, field sampling forms, and laboratory results.

Attachment 9.4
Justification for IHG Policy of 5 day Notification

Based on DOE & OSHA Employee Monitoring Notification Requirements

ANALYTE	OSHA Gen Ind. Const. Reg.	OSHA Working Days	Additional required information
BNL Policy- exposures exceeding OEL	--	**5**	If > PEL or TLV: In Exposure Assessment Report include a statement that exposure exceeded OEL limits and describe corrective actions
1,2-dibromo-3-chloropropane (DBCP) (96-12-8)	1910.1044 1926.1144	5	If > PEL: In Exposure Assessment Report include a statement that exposure exceeded OEL limits and describe corrective actions
1,3-Butadiene (106-99-0)	1910.1051 NS	5	Within 15 days if > PEL/STEL/Ceiling: In Exposure Assessment Report include a statement that exposure exceeded OEL limits and describe corrective actions with schedule for completion
Asbestos (1332-21-4)	1910.1001/ 1926.1101	15/ ASAP	If > PEL/STEL: In Exposure Assessment Report include a statement that exposure exceeded OEL limits and describe corrective actions
Acrylonitrile (107-13-1)	1910.1045 1926.1145	5	If > PEL/STEL/Ceiling: In Exposure Assessment Report include a statement that exposure exceeded OEL limits and describe corrective actions
Benzene (71-43-2)	1910.1028 1926.1148	15	If > PEL/STEL/Ceiling: In Exposure Assessment Report include a statement that exposure exceeded OEL limits and describe corrective actions
Beryllium (7440-41-7)	10CFR850	10	Any monitoring result >Action Level: notify DOE and OMC In Exposure Assessment Report include a statement that exposure exceeded OEL limits and describe corrective actions
Cadmium (7440-43-9)	1910.1027 1926.1127	15/ 5	If > PEL/STEL: In Exposure Assessment Report include a statement that exposure exceeded OEL limits and describe corrective actions
Cotton Dust	1910.1043 NS	20	If > PEL/STEL: In Exposure Assessment Report include a statement that exposure exceeded OEL limits and describe corrective actions
Ethylene Oxide (75-21-8)	1910.1047 1926.1147	15	If > PEL/STEL/Ceiling: In Exposure Assessment Report include a statement that exposure exceeded OEL limits and describe corrective actions
Formaldehyde (50-00-0)	1910.1048 1926.1148	15	If > PEL/STEL/Ceiling: In Exposure Assessment Report include a statement that exposure exceeded OEL limits and develop CAP with description of corrective actions
Inorganic Arsenic (7440-38-2)	1910.1018 1926.1118	5	If > PEL/STEL: In Exposure Assessment Report include a statement that exposure exceeded OEL limits and describe corrective actions
Lead, Inorganic (7439-92-1)	1910.1025 1926.62	5	If > PEL/STEL: In Exposure Assessment Report include a statement that exposure exceeded OEL limits and describe corrective actions
Methylene Chloride (dichloromethane) (75-09-2)	1910.1052 1926.1152	15	Within 15 days if > PEL/STEL/Ceiling: In Exposure Assessment Report include a statement that exposure exceeded OEL limits and describe corrective actions with schedule for completion
Methylenedianiline (5124-30-1)	1910.1050 1926.60	15	If > PELSTEL/Ceiling: In Exposure Assessment Report include a statement that exposure exceeded OEL limits and describe corrective actions
Vinyl Chloride (75-01-4)	1910.1017 1926.1117	10	If > PEL/STEL/Ceiling: In Exposure Assessment Report include a statement that exposure exceeded OEL limits and describe corrective actions

Attachment 9.5
Instructions on Saving Files for Attachment to IH Group's Electronic Database

These instructions refer to documents and images that we want attached to Compliance Suite(CS) Surveys and/or Samples. By placing them in local or mapped directories they may become irretrievable.

Although CS allows us to attach documents from our hard drives and other locations, to ensure documents/images are kept available through CS, we need to put them all in one location. A directory has been established, which has folders organized by BNL department. You should already have Desktop Shortcuts to these directories. If not, the following instructions show you how to establish them.

Instead of MAPPING a shortcut to the CS-Documents or CS-images directories, you need to ***create a desktop shortcut*** to the proper directory. First check to see if the Desktop Shortcuts already exist. If they exist then skip down to saving files.

Check for Desktop Shortcuts

- Go to My Computer
- Select Desktop from the drop down (If the two shortcuts appear [CS-Images and CS-documents] then skip down to saving files)

Create Desktop Shortcuts

Images

- Right click on your windows screen
- Select new
- Then select shortcut
- In the location box type: \\bnl-apps\CS-Images

Documents

- Do the same for: \\bnl-apps\CS-documents

Saving Files

- Have the file open (word document, PDF, spreadsheet, jpeg, etc. it doesn't matter)
- Select ñFileò then ñSave Asò
- You need to save through the desktop shortcut, so select Desktop on the left toolbar. If you don't have this, select Desktop from the drop down list.
- The two folders will appear. Select *CS-documents* for a document and *CS-Images* for a photo
- Now select the department folder, name your file and save. For file naming use the sample number then some short descriptor (e.g. 120-020206-PN-01-tech; 120-020206-AN-01-survey_map).
- This ***does not*** attach your file to the survey/sample in CS. You still need to go to CS and attach the file as you normally would.

Attachment 9.6
ORPS Reporting Triggers for IH Hazards

As per the SBMS Subject Area, all IH professionals are required to appropriately report abnormal events or conditions that they perceive may endanger the health and safety of staff or the public.

1. Report the event or condition to your supervisor (or line organization supervisor) as soon as practical (if unavailable, to the next higher level of management) or the ES&H Coordinator who will notify the Department Chair/Division Manager as appropriate. (Note: If you have reported the conditions to the line organization supervisor and are not satisfied with the respond and action, notify your supervisor).

2. The Department Chair/Division Manager will subsequently relay the information to an *Occurrence Categorizer* who determines if the event or condition meets the criteria for a reportable occurrence.

SHSD IH Group Policy of IH Personnel Exposure Monitoring Results that trigger ORPS reporting:

A. TWA-8 or STEL personnel exposure is greater than the TLV or PEL (Occupational Exposure Limit [OEL]). Follow Policy for subtraction of APF for PPE worn in Attachment 9.8

B. Noise Dose is >100% TWA-8.
Follow Policy for subtraction of NRR for PPE worn in Attachment 9.8.

C. Exposure on a sampling event does not exceed a TWA-8 or STEL OEL, but additional time was worked in an area that was not monitored and that extra time can reasonably be anticipated to have caused exposure to be above the TWA-8 or STEL.

D. Exposure on a sampling event does not exceed a TWA-8 or STEL OEL, but additional time was spent doing another activity and that extra time can reasonably be anticipated to have caused exposure to be above the TWA-8 or STEL.

E. Exposure on the day of sampling does not exceed a TWA-8 or STEL OEL because of PPE, but work on the same operation in the recent past (within 1 month) resulted in overexposure because the same PPE was not worn.

F. Exposure on the day of sampling does not exceed a TWA-8 or STEL OEL, but work on the same operation in the recent past (within 1 month) resulted in overexposure because the exposure time was longer.

G. Only area survey data exists, but there was a known exposure of personnel for an amount of time that would have exceeded the TWA-8 OR STEL OEL. Follow Policy for subtraction of APF for PPE worn in Attachment 9.8

H. Determining ORPS Reportable Events when full shift is not monitored or PPE is used:

Time Worked	Start:	End:	
Time Monitored	Start:	End:	Total time NOT monitored:
Exposure Determination	Exposure during monitored time:		Exposure during NON-monitored time:
	Exposure for Shift TWA-8 combined monitored & non-monitored (regardless of PPE)		Exposure for Shift TWA-8 (with PPE reduction)
PPE reduction factor basis:	[OSHA Adjusted NRR reduction for Noise PPE or Assigned Protection Factor for Respirators]		

Attachment 9.7
10 CFR 851 NTS Reporting Thresholds

Management Issues Noncompliance[1]
Repetitive Noncompliances
Programmatic Issue
Intentional Violation or Misrepresentation

Noncompliances Associated with Occurrences (DOE Manual 231.1-2	
ORPS-Related Event	**Description[2]**
Events that result in Occupation Injuries/Illness	1. Fatality/terminal illness (SC 1)[3] 2. Impatient hospitalization of Ó3 personnel (SC 1) 3. Ó3 personnel having DART cases (SC 2) **4. Personnel Exposure > limits requiring medical treatment (SC 2)** **5. Personnel exposure > limits (SC 3)** 6. Serious occupation injury (SC 3)
Near Misses	**ORPS Group 10; SC 1-4**

Other Significant Conditions[4]
Conditions meeting the criteria of Severity Level I (serious) violations > low relative risk[5]

Trial Period: Contractors are encouraged to start reporting WSH non-compliances on a no-fault basis on or before June 1, 2006. It is expected that the WSH NTS reporting thresholds trial period will last approximately six months.

Note: WSH non-compliances reported into NTS must have a direct or immediate relationship to worker safety and health and cite specific standards from 10 CFR 851.

1 Refer to Operational Procedures (June 1998) document titled ñIdentifying, Reporting and Tracking Nuclear Safety Non-compliancesò for a description of non-compliances in the category of ñManagement Issuesò

2 The description following each category of ORPS-related event is a brief characterization of the related criteria. Use the full explanation of the criteria contained in DOE Manual 231.1-2, *Occurrence Reporting and Processing of Operations Information,* to establish NTS reportability of event-related worker safety and health non-compliances.

3 For an explanation of Significance Categories (SC), refer to DOE M 231.1-2

4 Conditions of noncompliance identified by any method or means (e.g., Contractor Assessments, Internal Review Processes, External Assessments, Employee Concerns) that would not be reported into NTS as either a management issue or occurrence

5 Contractors should use a risk assessment methodology based on severity and probability of occurrence to assess the relative risk of conditions in the workplace. Conditions in this category with an associated low relative risk should not be reported. Note that a number of low risk and/or Severity Level II (Other-than-Serious) conditions may point to the existence of a serious condition and/or conditions with underlying programmatic issues.

Attachment 9.8
OSHA Criteria for Reducing the Actual Exposure based on PPE Usage

ANALYTE (CAS#)	OSHA Gen Ind. Const. Reg.	ORPS Trigger	When does PPE reduces exposure calculation (APF = Assigned Protection Factor)
1,2-dibromo-3-chloropropane (DBCP) (96-12-8)	1910.1044 1926.1144	OSHA or ACGIH TWA-8	Yes: Reduce exposure by APF in determining actual exposure level and ORPS reporting. No: Do not reduce exposure regarding inclusion in medical surveillance and training
1,3-Butadiene (106-99-0)	1910.1051	OSHA or ACGIH TWA-8	Yes: Reduce exposure by APF in determining actual exposure level and ORPS reporting. No: Do not reduce exposure regarding inclusion in medical surveillance and training
Inorganic Arsenic (7440-38-2)	1910.1018 1926.1118	OSHA or ACGIH TWA-8 OR STEL	Yes: Reduce exposure by APF in determining actual exposure level and ORPS reporting. No: Do not reduce exposure regarding inclusion in medical surveillance and training
Asbestos (1332-21-4)	1910.1001/ 1926.1101	OSHA or ACGIH TWA-8 OR STEL	Not specified by OSHA Yes: Reduce exposure by APF in determining actual exposure level and ORPS reporting. No: Do not reduce exposure regarding inclusion in medical surveillance and training
Acrylonitrile (107-13-1)	1910.1045 1926.1145	OSHA or ACGIH TWA-8 OR STEL	Yes: Reduce exposure by APF in determining actual exposure level and ORPS reporting. No: Do not reduce exposure regarding inclusion in medical surveillance and training
Benzene (71-43-2)	1910.1028 1926.1148	OSHA or ACGIH TWA-8 OR STEL	Yes: Reduce exposure by APF in determining actual exposure level and ORPS reporting. No: Do not reduce exposure regarding inclusion in medical surveillance and training
Beryllium (7440-41-7)	10CFR850	OSHA or ACGIH TWA-8 OR STEL	Not specified by DOE Yes: Reduce exposure by APF in determining actual exposure level and ORPS reporting. No: Do not reduce exposure regarding inclusion in medical surveillance and training
Cadmium (7440-43-9)	1910.1027 1926.1127	OSHA or ACGIH TWA-8 OR STEL	Yes: Reduce exposure by APF in determining actual exposure level and ORPS reporting. No: Do not reduce exposure regarding inclusion in medical surveillance and training
Ethylene Oxide (75-21-8)	1910.1047 1926.1147	OSHA or ACGIH TWA-8 OR STEL	Yes: Reduce exposure by APF in determining actual exposure level and ORPS reporting. No: Do not reduce exposure regarding inclusion in medical surveillance and training
Formaldehyde (50-00-0)	1910.1048 1926.1148	OSHA or ACGIH TWA-8 OR STEL	Yes: Reduce exposure by APF in determining actual exposure level and ORPS reporting. No: Do not reduce exposure regarding inclusion in medical surveillance and training
Lead, Inorganic (7439-92-1)	1910.1025 1926.62	OSHA or ACGIH TWA-8 OR STEL	Yes: Reduce exposure by APF in determining actual exposure level and ORPS reporting. No: Do not reduce exposure regarding inclusion in medical surveillance and training

ANALYTE (CAS#)	OSHA Gen Ind. Const. Reg.	ORPS Trigger	When does PPE reduces exposure calculation (APF = Assigned Protection Factor)
Methylene Chloride (dichloromethane) (75-09-2)	1910.1052 1926.1152	OSHA or ACGIH TWA-8 or STEL	Yes: Reduce exposure by APF in determining actual exposure level and ORPS reporting. No: Do not reduce exposure regarding inclusion in medical surveillance and training
Methylenedianiline (5124-30-1)	1910.1050 1926.60	OSHA or ACGIH TWA-8	Yes: Reduce exposure by APF in determining actual exposure level and ORPS reporting. No: Do not reduce exposure regarding inclusion in medical surveillance and training
Noise	1910.95 ACGIH	OSHA or ACGIH TWA-8 or STEL	Yes: Reduce exposure by Adjusted NRR in determining actual exposure level and ORPS reporting. No: Do not reduce exposure regarding inclusion in medical surveillance and training
Vinyl Chloride (75-01-4)	1910.1017 1926.1117	OSHA or ACGIH TWA-8 or STEL	Yes: Reduce exposure by APF in determining actual exposure level and ORPS reporting. No: Do not reduce exposure regarding inclusion in medical surveillance and training

Attachment 9.9
Training & Medical Surveillance

Summary of DOE/OSHA/ACGIH Requirements

Driver	Medical Surveillance	Training
1910.1014 2-Acetyl aminofluorene	At no cost to the employee, a program of medical surveillance shall be established and implemented for employees considered for assignment to enter regulated areas, and for authorized employees. Special medical surveillance by a physician shall be instituted within 24 hours for employees present in the potentially affected area at the time of the emergency. A report of the medical surveillance and any treatment shall be included in the incident report, in accordance with paragraph (f)(2) of this section.	Each employee prior to being authorized to enter a regulated area, shall receive a training and indoctrination program including, but not necessarily limited to:é
1910.1045 Acrylonitrile	The employer shall institute a program of medical surveillance for each employee who is or will be exposed to AN at or above the action level, without regard to the use of respirators.	(o)(1) employees exposed to AN above the action level, all employees whose exposures are maintained below the action level by engineering and work practice controls, and all employees subject to potential skin or eye contact with liquid AN.
1910.1018 Inorganic Arsenic	The employer shall institute a medical surveillance program for the following employees: (A) All employees who are or will be exposed **above the action level.** without regard to the use of respirators, at **least 30 days per year;**	(o)(1) Employees who are subject to exposure to inorganic arsenic **above the action level** without regard to respirator use, or for whom there is the possibility of skin or eye irritation from inorganic arsenic. Training program informed of: (A) Information contained in Appendix A; (B) Quantity, location, manner of use, storage, sources of exposure, and the specific nature of operations which could result in exposure to inorganic arsenic as well as any necessary protective steps; (C) Respirators; (D) Medical surveillance program; (E) Engineering controls and work practices, and (F) Review of OSHA standard.
1926.1101 Asbestos-Construction	The employer shall institute a medical surveillance program for all employees who for a combined total of 30 or more days per year are engaged in Class I, II and III work or are exposed at or above a permissible exposure limit. For purposes of this paragraph, any day in which a worker engages in Class II or Class III operations or a combination thereof on intact material for one hour or less (taking into account the entire time spent on the removal operation, including cleanup) and, while doing so, adheres fully to the work practices specified in this standard, shall not be counted.	Based on role and OSHA Type of work
1910.1028 Benzene	The employer shall make available a medical surveillance program for employees who are or may be exposed to benzene • at or above the action level 30 or more days per year; • for employees who are or may be exposed to benzene at or above the PELs 10 or more days per year; • for employees who have been exposed to more than 10 ppm of benzene for 30 or more days in a year prior to the effective date of the standard when employed by their current employer; and • for employees involved in the tire building operations called tire building machine operators, who use solvents containing greater than 0.1 percent benzene.	The employer shall provide employees with information and training at the time of their initial assignment to a work area where benzene is present. If exposures are above the action level, employees shall be provided with information and training at least annually thereafter.
1910.1003 Benzidine	At no cost to the employee, a program of medical surveillance shall be established and implemented for employees considered for assignment to enter regulated areas, and for authorized employees. Special medical surveillance by a physician shall be instituted within 24 hours for employees present in the potentially affected area at the time of the emergency. A report of the medical surveillance and any treatment shall	Each employee prior to being authorized to enter a regulated area, shall receive a training and indoctrination program including, but not necessarily limited to:é

Driver	Medical Surveillance	Training
	be included in the incident report, in accordance with paragraph (f)(2) of this section.	
10CFR 850 Beryllium	(d) DOE contractors shall establish and implement a medical surveillance program under the direction of the SOMD for all beryllium workers exposed **at or above the action level or above the STEL.**	Workers who may be exposed to beryllium Training include, but not be limited to, beryllium health risk, exposure reduction, safe handling of beryllium, and medical surveillance.
1910.1030 Bloodborne Pathogens	**(f) Hepatitis B vaccination and post-exposure evaluation and follow-up—** **(**1) General. (i) The employer shall make available the hepatitis B vaccine and vaccination series to all employees who have occupational exposure, and post-exposure evaluation and follow-up to all employees who have had an exposure incident. (3) Post-exposure Evaluation and Follow-up. Following a report of an exposure incident, the employer shall make immediately available to the exposed employee a confidential medical evaluation and follow-up,	(2)(i) Employees with occupational exposure (2)(ix) Employees in HIV or HBV research laboratories and HIV or HBV production facilities
1910.1051 Butadiene	Each employee with exposure to BD at concentrations at or above the action level on 30 or more days or for employees who have or may have exposure to BD at or above the PELs on 10 or more days a year;	The employer shall train each employee who is potentially exposed to BD at or above the action level or the STEL in accordance with the requirements of this section. The employer shall institute a training program, ensure employee participation in the program, and maintain a record of the contents of such program.
1910.1027: Cadmium	Currently exposed - The employer shall institute a medical surveillance program for all employees who are or may be exposed to cadmium at or above the action level unless the employer demonstrates that the employee is not, and will not be, exposed at or above the action level on 30 or more days per year (twelve consecutive months); and, Previously exposed - The employer shall also institute a medical surveillance program for all employees who prior to the effective date of this section might previously have been exposed to cadmium at or above the action level by the employer, unless the employer demonstrates that the employee did not prior to the effective date of this section work for the employer in jobs with exposure to cadmium for an aggregated total of more than 60 months.	The employer shall train each employee who is potentially exposed to cadmium in accordance with the requirements of this section. The employer shall institute a training program, ensure employee participation in the program, and maintain a record of the contents of such program. Training shall be provided prior to or at the time of initial assignment to a job involving potential exposure to cadmium and at least annually thereafter.
1910.1003 (1008) bis-**Chloromethyl ether**	At no cost to the employee, a program of medical surveillance shall be established and implemented for employees considered for assignment to enter regulated areas, and for authorized employees. Special medical surveillance by a physician shall be instituted within 24 hours for employees present in the potentially affected area at the time of the emergency. A report of the medical surveillance and any treatment shall be included in the incident report, in accordance with paragraph (f)(2) of this section.	Each employee prior to being authorized to enter a regulated area, shall receive a training and indoctrination program including, but not necessarily limited to:é
1910.1026 Chromium	The employer shall make medical surveillance available at no cost to the employee, and at a reasonable time and place, for all employees: Who are or may be occupationally exposed to chromium (VI) at or above the action level for 30 or more days a year; Experiencing signs or symptoms of the adverse health effects associated with chromium (VI) exposure; or Exposed in an emergency.	The employer shall ensure that each employee can demonstrate knowledge of at least the following: The contents of this section; and The purpose and a description of the medical surveillance program required by paragraph (k) of this section.
1910.1044 1,2-Dibromo-3-chloropropane	The employer shall make available a medical surveillance program for employees who work in regulated areas and employees who are subjected to DBCP exposures in an emergency situation.	The employer shall train each employee who may be exposed to DBCP in accordance with the requirements of this section. The employer shall institute a training program and ensure employee participation in the program.
1910.1003 (1007) 3,3'-Dichloro benzidine (and	At no cost to the employee, a program of medical surveillance shall be established and implemented for employees considered for assignment to enter regulated areas, and for authorized employees. Special medical surveillance by a physician shall be	Each employee prior to being authorized to enter a regulated area, shall receive a training and indoctrination program including, but not necessarily limited to:é

Driver	Medical Surveillance	Training
its salts	instituted within 24 hours for employees present in the potentially affected area at the time of the emergency. A report of the medical surveillance and any treatment shall be included in the incident report, in accordance with paragraph (f)(2) of this section.	
1910.1015: 4-Dimethyl aminoazobenzene	At no cost to the employee, a program of medical surveillance shall be established and implemented for employees considered for assignment to enter regulated areas, and for authorized employees. Special medical surveillance by a physician shall be instituted within 24 hours for employees present in the potentially affected area at the time of the emergency. A report of the medical surveillance and any treatment shall be included in the incident report, in accordance with paragraph (f)(2) of this section.	Each employee prior to being authorized to enter a regulated area, shall receive a training and indoctrination program including, but not necessarily limited to:é
1910.1012 Ethyleneimine	At no cost to the employee, a program of medical surveillance shall be established and implemented for employees considered for assignment to enter regulated areas, and for authorized employees. Special medical surveillance by a physician shall be instituted within 24 hours for employees present in the potentially affected area at the time of the emergency. A report of the medical surveillance and any treatment shall be included in the incident report, in accordance with paragraph (f)(2) of this section.	Each employee prior to being authorized to enter a regulated area, shall receive a training and indoctrination program including, but not necessarily limited to:é
1910.1047 Ethylene Oxide	The employer shall institute a medical surveillance program for all employees who are or may be exposed to EtO at or above the action level, without regard to the use of respirators, for at least 30 days a year. The employer shall make available medical examinations and consultations to all employees who have been exposed to EtO in an emergency situation.	The employer shall provide employees who are potentially exposed to EtO at or above the action level or above the excursion limit with information and training on EtO at the time of initial assignment and at least annually thereafter.
1910.1048 Formaldehyde	The employer shall institute medical surveillance programs for all employees exposed to formaldehyde at concentrations at or exceeding the action level or exceeding the STEL. The employer shall make medical surveillance available for employees who develop signs and symptoms of overexposure to formaldehyde and for all employees exposed to formaldehyde in emergencies.	Participation. The employer shall assure that all employees who are assigned to workplaces where there is exposure to formaldehyde participate in a training program, except that where the employer can show, using objective data, that employees are not exposed to formaldehyde at or above 0.1 ppm, the employer is not required to provide training. The training shall be repeated at least annually.
1910.1450 Lab Standard	Whenever an employee develops signs or symptoms associated with a hazardous chemical to which the employee may have been exposed in the laboratory, the employee shall be provided an opportunity to receive an appropriate medical examination. Where exposure monitoring reveals an exposure level routinely above the action level (or in the absence of an action level, the PEL) for an OSHA regulated substance for which there are exposure monitoring and medical surveillance requirements, medical surveillance shall be established for the affected employee as prescribed by the particular standard. Whenever an event takes place in the work area such as a spill, leak, explosion or other occurrence resulting in the likelihood of a hazardous exposure, the affected employee shall be provided an opportunity for a medical consultation. Such consultation shall be for the purpose of determining the need for a medical examination.	The employer shall provide employees with information and training to ensure that they are apprised of the hazards of chemicals present in their work area. Such information shall be provided at the time of an employee's initial assignment to a work area where hazardous chemicals are present and prior to assignments involving new exposure situations. The frequency of refresher information and training shall be determined by the employer.
1926.62 Lead-Construction	(j)(1)(i) The employer shall make available *initial medical surveillance* to employees occupationally exposed on **any day to lead at or above the action level.** (j)(1)(ii) The employer shall institute a *medical surveillance program* in accordance with paragraphs (j)(2) and (j)(3) of this section for all employees who are or may be exposed by the employer **at or above the action level for more than 30 days** in any consecutive 12 months;	(ii) For all employees who are subject to exposure to lead at or **above the action level on any day** or who are subject to exposure to lead compounds which may cause skin or eye irritation (e.g. lead arsenate, lead azide)
1910.1025	The employer shall institute a medical surveillance	Each employer who has a workplace in which there is

Driver	Medical Surveillance	Training
Lead-General Industry	program for all employees who are or may be exposed above the action level for more than 30 days per year.	a potential exposure to airborne lead at any level shall inform employees of the content of Appendices A and B of this regulation. The employer shall train each employee who is subject to exposure to lead at or above the action level, or for whom the possibility of skin or eye irritation exists, in accordance with the requirements of this section. The employer shall institute a training program and ensure employee participation in the program.
1910.1003 (1006) Methyl Chloro methyl ether	At no cost to the employee, a program of medical surveillance shall be established and implemented for employees considered for assignment to enter regulated areas, and for authorized employees. Special medical surveillance by a physician shall be instituted within 24 hours for employees present in the potentially affected area at the time of the emergency. A report of the medical surveillance and any treatment shall be included in the incident report, in accordance with paragraph (f)(2) of this section.	Each employee prior to being authorized to enter a regulated area, shall receive a training and indoctrination program including, but not necessarily limited to:é
1910.1052: Methylene Chloride	At or above the action level on 30 or more days per year, or above the 8-hour TWA PEL or the STEL on 10 or more days per year; Above the 8-TWA PEL or STEL for any time period where an employee has been identified by a physician or other licensed health care professional as being at risk from cardiac disease or from some other serious MC-related health condition and such employee requests inclusion in the medical surveillance program	The employer shall provide information and training for each affected employee prior to or at the time of initial assignment to a job involving potential exposure to MC.
1910.1050 Methylene Dianiline	The employer shall make available a medical surveillance program for employees exposed to MDA: Employees exposed at or above the action level for 30 or more days per year; Employees who are subject to dermal exposure to MDA for 15 or more days per year; Employees who have been exposed in an emergency situation; Employees whom the employer, based on results from compliance with paragraph (e)(8), has reason to believe are being dermally exposed; and Employees who show signs or symptoms of MDA exposure.	The employer shall provide employees with information and training on MDA, in accordance with 29 CFR 1910.1200(h), at the time of initial assignment and at least annually thereafter.
1910.1003 (1004) alpha-**Naphthylamine** **1910.1003 (1009)** beta-**Naphthylamine**	At no cost to the employee, a program of medical surveillance shall be established and implemented for employees considered for assignment to enter regulated areas, and for authorized employees. Special medical surveillance by a physician shall be instituted within 24 hours for employees present in the potentially affected area at the time of the emergency. A report of the medical surveillance and any treatment shall be included in the incident report, in accordance with paragraph (f)(2) of this section.	Each employee prior to being authorized to enter a regulated area, shall receive a training and indoctrination program including, but not necessarily limited to:é
1910.95 Noise	The employer shall administer a continuing, effective hearing conservation program, as described in paragraphs (c) through (o) of this section, whenever employee noise exposures equal or exceed an 8-hour time-weighted average sound level (TWA) of 85 decibels measured on the A scale (slow response) or, equivalently, a dose of fifty percent. For purposes of the hearing conservation program, employee noise exposures shall be computed in accordance with appendix A and Table G-16a, and without regard to any attenuation provided by the use of personal protective equipment.	OSHA (k)(1) for all employees who are exposed to noise at or above an 8-hour time-weighted average of 85 decibels, Training: ACGIH: when workers are exposed to noise at or above the TLVs®.
1910.97 Non-Ionizing Radiation	None	none

Driver	Medical Surveillance	Training
Static Magnetic Fields	BNL SBMS : Ensure that personnel who routinely work within the area receive training in magnetic field hazards and associated safety work control procedures. See the Control Requirements for Static Magnetic Fields exhibit for a listing of personnel who must receive training.	Personnel who must receive training complete either(a) the Static Magnetic Fields web-based training located on the BNL Training Web Site or (b) an equivalent departmental training course approved by the Static Magnetic Fields Subject Matter Expert. **Note:** Additional facility-specific training may be required. Check with the ES&H Coordinator or Training Coordinator of the facility.
1910.1017 Vinyl Chloride	Medical surveillance. A program of medical surveillance shall be instituted for each employee exposed, without regard to the use of respirators, to vinyl chloride in excess of the action level.	Each employee engaged in vinyl chloride or polyvinyl chloride operations shall be provided training in a program relating to the hazards of vinyl chloride and precautions for its safe use.

Attachment 9.10
Monitoring Plan and Sampling Strategy

Exemptions from Exposure Monitor Planning:

- Some IH hazards that are more reactionary based on an event or unusual condition, especially Indoor Air Quality investigations and confined space pre-entry testing, are not prioritized using this procedure.
- Some field measuring work, especially exhaust ventilation testing, is done based on requests from line organizations that is dependent on operations and are not scheduled via this procedure.
- Other time spent by SHSD Field Deployed Personnel, such as Hazard Recognition during Tier 1 Inspections, other consulting, and program management is not tracked in the *ComplianceSuite*® database.

1. **Measured/Estimated Personnel Exposure Risk** entry into the *ComplianceSuite*® database:
   - If data exists from previous monitoring of the operation or a very similar operation, that data is to be used as the basis for the risk ranking and entered in to the database.
   - For operations not previously monitored, estimate the potential personnel exposure breathing zone (or whole body exposure for noise and NIR).
   - Once unevaluated operations have been monitored, that data is to be used as the revise the risk ranking in the database or replace an estimate.

2. **Rank the risk** of the operation from A to D or U using the following ranking system:

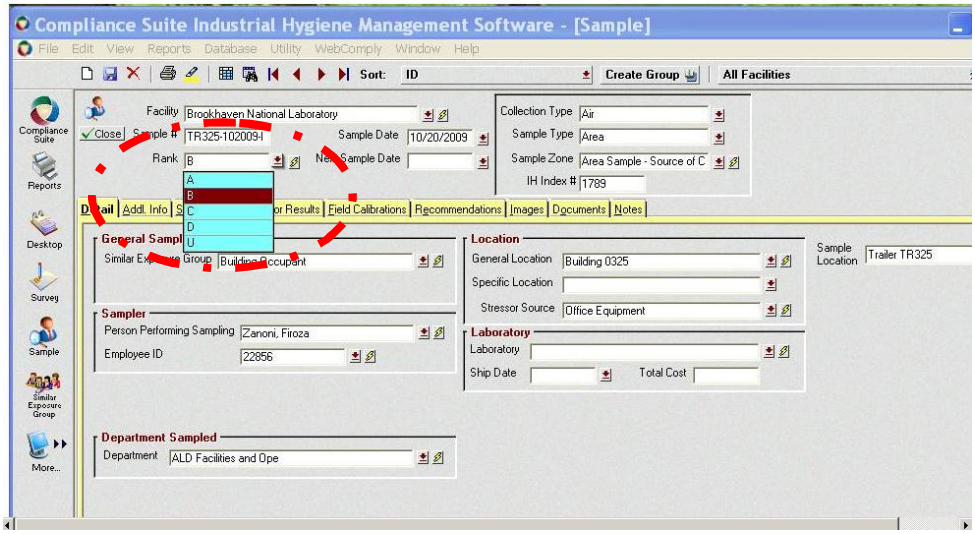
Rank	Estimated or Known Exposure (without regards to PPE used)	Frequency of Monitoring
A	Worker exposure exceeds OEL on 8hr TWA	All workers in Similar Exposure Group (SEG) during each job until PPE requirements characterized, then all workers quarterly
B	Area exposure level exceeds OEL, but worker exposure is < TWA-8 based on duration in area	25% of workers in SEG, Quarterly
C	Area/worker exposure is >10% of OEL to OEL level	10% of workers once per year
D	Area/worker exposure is Non-detected to <10% of OEL	1 representative sample per year for 3 years, then one sample per 3 year cycle
U	Unknown: Too little is known of the operation to estimate potential exposure	Sample on next operation(s) until characterized as A-D

3. Whenever feasible, address monitoring of the highest risk operations first (i.e. ranking of A and U).

4. SHSD management will periodically address the status of the exposure monitoring plan and develop new special emphasis projects or corrective actions. The plans will be identified in the BNL Annual ***BNL Industrial Hygiene Exposure Monitoring Plan.*** See Attachment 9.1 for an example of the monitoring plan. The SHSD SOP web page will maintain the current official copy of the Monitoring Plan.

5. If a process or operation is changed in a manner that alters potential employee exposure, modify the risk ranking based on the new set of conditions.

Screen Shot of *ComplianceSuite* Risk Rating



Sample of the Site Level Exposure Monitoring Plan and Monitoring Strategy

Worker Safety and Health
Annual Industrial Hygiene Monitoring Plan
FY 2006

Prioritization of Monitoring Strategies for Specific Stressors

IH stressors at BNL include: asbestos, beryllium, cadmium, carcinogens, chemicals, heat/cold stress, lead, noise, non-ionizing radiation, reproductive hazards, silica, and welding. Additional stressors might include areas such as ergonomics. However, these areas are not part of a monitoring strategy.

Priority stressors have been established and will be the focus of IH monitoring throughout FY2006. The top three priorities for BNL lab-wide this year are:

1. Noise
2. Cutting, Welding, Brazing
3. Chemicals

The priority stressors for each department will vary as established in our IH Needs Calculator. Each department has a different set of IH stressors due to the type of activities they conduct. For any department that does not have one or more of the three BNL priority stressors noted above, the Safety and Health Representative will determine the next highest need based on a hazard ranking scheme as described below.

Exposure Characterization, Hazard Ranking and Sampling Frequency

The IH Calculator was developed to assess the effort required for regulatory compliance. Its purpose was to identify the resource needs necessary to provide an effective baseline monitoring program. Using the number of monitoring events and average estimates of time for each event, the resource need is generated for each department.

The Compliance Suite IH module is currently the single electronic source for IH monitoring data. All IH monitoring samples are documented in the database with specific information pertaining to the samples.

The ComplianceSuite® is an activity scheduler, which identifies the areas of concern for IH monitoring during the coming year. It is currently being populated with the proposed baseline monitoring as identified in the IH Calculator. This tool will be used to rank the monitoring events and establish the frequency for future sampling events based on the rank profile. é .

The IH monitoring data will be reviewed by a Senior Industrial Hygienist and incorporated into exposure assessments (EAs). The EAs will be integrated into the existing programs, experiments and operations. The IH Monitoring Plan will be reviewed and updated on an annual cycle by the IH Group manager.

BROOKHAVEN NATIONAL LABORATORY

IH60500 Attachment 10.11

5-day Employee Notification Record

Date Results Received:	Date Notification Due:	**Date Notification Completed:**
Date of Sampling:	Work Location:	
Work Being Conducted:		

This Section to be completed

Sample

Note: the hazard section can be modified to meet the needs of the sampling results

See the SHSD SOP Web Page for the current version of this form.

Exposure in Compliance with Standards (**& OSHA)**		**ure Exceeds andards** **IH or OSHA)**
Review of this data indi exposure levels were **in compliance** with regulat limits. The employees represented by this exposure monitoring were informed of the results by: Print Name: Notifier's Signature:	protective equipment was sufficient. Employees represented by this exposure were informed of the results and corrective actions by: Print Name: Notifier's Signature:	data indicates s were **ABOVE** a . The employees represented by this exposure monitoring were informed of the results and corrective actions by: Print Name: Notifier's Signature:

Hazard:

Employee Name/ BNL ID #'s	Calculated Exposure **Without** PPE Protection	Calculated Exposure **With** PPE Protection	**OSHA** Occupational Exposure Limits	**ACGIH** Occupational Exposure Limits
	a. Real time Exposure= b. TWA_8 =	a. Real time Exposure= b. TWA_8 =	PEL = AL = C =	TLV = STEL = C =

PEL = Permissible Exposure Limit **AL** = Action Level **C** = Ceiling Limit **TLV** = Threshold Limit Value **STEL** = Short Term Exposure Limit
Real time Exposure= Concentration during sampling

Corrective Actions
Required when Personal Exposure is Above Occupational Exposure Limit(s)

Corrective Action Needed (Substitution, Engineering Controls, Administrative Controls, PPE):	**Implementation Due Date:**

Who received a copy of this form: *Write in the name*

Worker:	**Supervisor:**	**ESH Coordinator:**
Worker:	**IHG:**	**Other:**
Worker:	**OMC:**	**Other:**
Worker:	**FS Rep:**	**Other:**

Industrial Hygiene Monitoring
Activity History During Sampling

IH60500 Attachment 10.2

Sample Number:	Operation:
Date:	Employee Sampled:

Time	Location	Activity
8:00 ï 8:30		
8:30 ï 9:00		
9:00 ï 9:30		
9:30-10:00		
10:00 ï 10:30		
10:30 ï 11:00		
11:00 ï 11:30		
11:30 ï 12:00		
12:00 ï 12:30		
12:30 ï 1:00		
1:00 ï 1:30		
1:30 ï 2:00		
2:00 ï 2:30		
2:30 ï 3:00		
3:00 ï 3:30		
3:30 ï 4:00		
4:00 ï 4:30		
4:30 ï 5:00		
5:00 ï 5:30		
5:30 ï 6:00		

Sample

Note: the time section can be modified to meet the needs of the sampling event

See the SHSD SOP Web Page for the current version of this form.

Comments on Significant, Unusual, or Non-Typical Events during Sampling

Person Recording the Activity:	Signature

BROOKHAVEN NATIONAL LABORATORY **DIRECT READING INSTRUMENT**
ENVIRONMENTAL, SAFETY, HEALTH & QUALITY DIRECTORATE

DATE:	SURVEYOR(S):

I. AREA INFORMATION

DEPT:	BLDG:	ROOM:
SOURCE:		
ENGINEERING CONTROLS:		

II. EMPLOYEE INFORMATION

FIRST NAME:	LAST NAME:	BNL #:
DEPT:	BLDG:	JOB TITLE:
EXPOSURE DURATION (HRS):	EXPOSURE (TIMES PER DAY):	EXPOSURE (DAYS PER YR):
JOB/TASK PERFORMED:		
PPE USED:		

III. SURVEY INSTRUMENT INFORMATION

INSTRUMENT:	MODEL:	SERIAL#:
FACTORY CALIBRATION DATE:	PRE-CAL: BY:	POST CAL: BY:

IV. SAMPLING INFORMATION & RESULTS

HAZARD	UNITS:	CORRECTION FACTOR:

TIME	LOCATION	READING	COMMENTS

_____ Additional monitoring data on page 2

V. CONCLUSIONS & RECOMMENDATIONS

Data continued from page 1

TIME	LOCATION	READING	COMMENTS

BROOKHAVEN NATIONAL LABORATORY

IH60500 Attachment 10.4
HP-IHP-60500

Environmental, Safety, Health & Quality Directorate
SHSD Industrial Hygiene

Planning, Analyzing, Reporting & Retaining Exposure Monitoring
Job Performance Measure (JPM) Completion Certificate

Candidate's Name	Life Number:	Qualification Date:

Note: This qualification is valid for 3 years. However, in order to maintain valid in qualification, at least three monitoring events (for technicians) or at least three hazard assessment reports (for professionals) is to be completed each year. If that minimum sampling is not maintained, the re-qualification on this procedure is required.

Criteria	Qualifying Performance Standard	Unsat.	Recov.	Satisf.
1. Area Hazards	Understands the need to be aware of the potential surface contamination, airborne levels of contaminants, radiological hazards, and noise hazards. Knows how to determine the need for PPE.			
2. Sampling Equipment	Knows the appropriate equipment needed for the analysis. Knows how to use it and its limitations. Knows where equipment needed for the procedure is located and how to properly sign it out.			
3. Assessment Protocol	Understands the assessment logic necessary to appropriately select sampling locations to accurately measure worker exposure potential. Has a basic understanding of the importance of multiple sampling points, sources sampling, breathing zone samples, and background samples.			
4. Exposure Assessment Strategy	Demonstrates knowledge of the *Site Level Exposure monitoring Plan* and the need to target hazards that BNL has highlighted and the need to incorporate them into the temporal schedule so that they are addressed during the year of emphasis.			
5. Exposure Standards	Demonstrates knowledge of each applicable occupational exposure limit, action level, TLV, PEL, STEL, etc. for reporting and as needed as part of the risk ranking			
6. Corrective Actions	Demonstrates knowledge of engineering controls, administrative controls, and personal protective equipment and operation adjustments that can improve or eliminate hazards.			
7. ORPS Reporting	Knows the criteria that trigger ORPS notification and can describe the process to begin reporting the incident.			
8. Medical Surveillance	Knows the criteria that trigger medical surveillance and can describe the process to begin reporting the incident and including workers in the OMC system.			
9. Call for Initial or Additional Training	Knows the criteria that trigger hazard specific training or retraining and can describe the process to begin reporting the incident and including workers in the BNL system.			
10. Notification of Employees	Knows the requirement for reporting results to employees as specified in regulations and this SOP.			
11. Assessment Report Content	Demonstrate the knowledge that all items to be addressed in the assessment report and states commitment to meet its requirements.			
12. Completing & Maintaining Documents	Shows where forms to record assessment results are located and how to correctly and completely fill them out. Demonstrates knowledge of how to enter documents in the BNL record management system, the SHSD Record Custodian files, and the *Compliance Suite* database.			
13. Distribution of copies	Demonstrates how to correctly distribute IH monitoring results/reports to workers, supervision, and OMC within prescribed time limits.			
14. Database	Demonstrates location of the database, how to open and select the IH Module, and location for scanned documents.			

Criteria	Qualifying Performance Standard	Unsat.	Recov.	Satisf.
15. Password protection	Has set up or understands how to have password access set up for entry into Compliance Suite database and the ñsharedò drive it resides on.			
16. Electronic Document Filing	Understands the electronic document storage (location) and attachment procedures.			

I accept the responsibility for performing this task as demonstrated within this JPM and the corresponding SOP.

Candidate Signature:	Date:

I certify the candidate has satisfactorily performed each of the above listed steps and is capable of performing the task unsupervised.

Evaluator Signature:	Date: