

BROOKHAVEN NATIONAL LABORATORY Safety & Health Services Division INDUSTRIAL HYGIENE GROUP Standard Operating Procedure	NUMBER IH60300
	REVISION Final Rev4
SUBJECT: Required Actions when Monitoring Results Exceed Action Levels or OELs	DATE 06/04/07
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1.0 Purpose & Scope

This document describes requirements and actions to be followed by Industrial Professionals when personal exposure monitoring indicates that an occupational exposure limit or action level has been exceeded. The purpose of this procedure is to establish a policy to:

- Define the trigger limits that initiate actions.
- Ensure that all needed actions are taken.
- Ensure that worker protection is achieved.
- Comply with regulatory requirements.

The goal of the procedure is to provide a uniform response protocol for the additional controls needed when assessing personnel exposure to industrial hygiene hazards that exceed occupational exposure limits.

2.0 Responsibilities

- 2.1 **Program Administration:** This procedure is administered through the SHSD Industrial Hygiene Group.
- 2.2 Members of the SHSD Industrial Hygiene Group and other BNL organizations that provide BNL with field monitoring services are required to follow this SOP.

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2.3 *Industrial Hygiene Professional:* The *Industrial Hygiene Professional* of SHSD and other BNL organizations that supervise industrial hygiene hazard assessments and personal exposure monitoring are responsible for interpreting sampling results and initiating & documenting corrective actions and required responses, including medical surveillance, training, and ORPS initiation.

3.0 Definitions

Industrial Hygiene Professional: A person who meets the BNL Unified Qualification Criteria in IH50300 and IH60500 and conducts industrial hygiene hazard assessments.

4.0 Prerequisites None. 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. Follow all precautions in the corresponding SOP when sampling for specific hazards.

6.0 Procedure

- 6.1 **Equipment:** Typical office equipment (including: computers, electronic media, telephones and internet access).
- 6.2 **Exposure Assessment Sampling Strategy:** Documented exposure assessments for chemical hazards, physical hazards, biological agents, and ergonomic stressors are to be done as per IH60500.
- 6.3 **Initial Notification of Employee Monitoring Results:** The *IH Professional* will determine whether or not an overexposure has occurred and will do the **Initial Notification of Employee Monitoring Results as per IH60500** within 5 business days.
- 6.4 **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

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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:

- Medical Surveillance (Attachment 9.1),
- Hazard Specific Training (Attachment 9.2)
- DOE ORPS [Occurrence Reporting and Processing System] (Attachment 9.3)
- DOE 10 CFR 851 NTS Reporting Thresholds (Attachment 9.5)

6.5 Once there is a determination that an overexposure has occurred, the IH professional is to immediately initiate (within 2 hours) the ORPS reporting process as per the SBMS Subject Area and Attachment 9.3 of this SOP.

6.6 **Prepare and distribute a formal report** on the exposure monitoring or hazard assessment is to be made as per IH60500 within 30 days of receipt of the sampling results.

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.

The Qualification criteria for any organization using this SOP are:

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 IH50300 *BNL IH Program and IH Group Training & Qualification Matrix* and IH60500 *Planning and Reporting Occupational Exposure Monitoring*. These qualification criteria are based on good industry practice.

7.2 Personnel are to meet the performance measures set forth in *Attachment 9.5 JPM/Qualification*. This qualification is to be completed on a three year cycle.

8.0 References

- 8.1 SBMS ORPS
- 8.2 OSHA, DOE requirements for IH hazards
- 8.3 ACGIH TLV booklet.

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8.4 10 CFR 851 NTS Reporting Thresholds: Available Online (04/13/2006)

9.0 Attachments

- 9.1 *ORPS Reporting Triggers*
- 9.2 *OSHA Criteria for Reducing Exposure based on PPE*
- 9.3 *10 CFR 851 NTS Reporting Thresholds*
- 9.4 *Medical Surveillance Triggers*
- 9.5 *Additional training Triggers*
- 9.6 *Job Performance Measure* form

10.0 Documentation

Document Development and Revision Control Tracking		
PREPARED BY: <i>(signature and date on file)</i> R. Selvey Date: 01/23/06	REVIEWED BY: <i>(signature and date on file)</i> J. W. Peters Date: 01/23/06	APPROVED BY: <i>(signature and date on file)</i> R. Selvey; IH Group Leader Date: 01/23/06
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ISM Review — Hazard Categorization <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low/Skill of the craft	Validation: <input type="checkbox"/> Formal Walkthrough <input checked="" type="checkbox"/> Desk Top Review <input checked="" type="checkbox"/> SME Review Name / Date: R. Selvey/E. Sierra 03/30/06	IMPLEMENTATION: Training Completed: JPM tracked Procedure posted on Web: 1/24/06 Hard Copy files updated: IH52

Revision Log
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Robert Selvey 1/31/06 (signature on file) SME Reviewer/Date:	Reviewer/Date:	Reviewer/Date:
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Robert Selvey 06/04/07 (signature on file) SME Reviewer/Date:	Reviewer/Date:	Reviewer/Date:

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Attachment 9.1

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 supervise(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]). (Note: OSHA rules for determining if over-exposure occurs even when PPE is worn varies by standard. See Attachment 9.4.)
- B. Noise Dose is >100% TWA-8 when PPE is not worn.
- C. The adjusted exposure is >OEL TWA-8 or STEL when PPE is worn, because the attenuation from the PPE is not sufficient to lower the exposure below the OEL.
- D. 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.
- E. 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.
- 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 same PPE was not worn.
- G. 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.
- H. 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.
- I. Determining ORPS Reportable Events when full shift is not monitored or PPE is used:

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Time Worked	Start:	End:	
Time Monitored	Start:	End:	Total time NOT monitored:
Exposure Determination	Exposure during <u>monitored</u> time:		Exposure during <u>NON-monitored</u> 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]		

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Attachment 9.2

OSHA Criteria for Reducing the Actual Exposure based on PPE and additional requirements based on duration of overexposure.

ANALYTE	OSHA Gen Ind. Const. Reg.	ORPS Trigger	PPE reduces exposure towards TWA-8 ?	Additional required information by OSHA to be reported to the employee
1,2-dibromo-3-chloropropane (DBCP) (96-12-8)	1910.1044 1926.1144	OSHA or ACGIH TWA-8	Yes for ORPS, No for including worker in control program*	If > PEL, include exceedance statement and description of corrective actions
1,3-Butadiene (106-99-0)	1910.1051	OSHA or ACGIH TWA-8	Yes for ORPS, No for including worker in control program*	Within 15 days if > PEL/STEL/Ceiling, include exceedance statement and description of corrective actions with schedule for completion
Inorganic Arsenic (7440-38-2)	1910.1018 1926.1118	OSHA or ACGIH TWA-8 OR STEL	Yes for ORPS, No for including worker in control program*	If > PEL/STEL, include exceedance statement and description of corrective actions
Asbestos (1332-21-4)	1910.1001/ 1926.1101	OSHA or ACGIH TWA-8 OR STEL	not specified	If > PEL/STEL, include exceedance statement and description of corrective actions
Acrylonitrile (107-13-1)	1910.1045 1926.1145	OSHA or ACGIH TWA-8 OR STEL	Yes for ORPS, No for including worker in control program*	If > PEL/STEL/Ceiling, include exceedance statement and description of corrective actions
Benzene (71-43-2)	1910.1028 1926.1148	OSHA or ACGIH TWA-8 OR STEL	Yes for ORPS, No for including worker in control program*	If > PEL/STEL/Ceiling, include exceedance statement and description of corrective actions
Beryllium (7440-41-7)	10CFR850	OSHA or ACGIH TWA-8 OR STEL	not specified	Any monitoring result If > Action Level: also notify DOE and OMC
Cadmium (7440-43-9)	1910.1027 1926.1127	OSHA or ACGIH TWA-8 OR STEL	Yes for ORPS, No for including worker in control program*	If > PEL/STEL, include exceedance statement and description of corrective actions
Ethylene Oxide (75-21-8)	1910.1047 1926.1147	OSHA or ACGIH TWA-8 OR STEL	Yes for ORPS, No for including worker in control program*	If > PEL/STEL/Ceiling, include exceedance statement and description of corrective actions
Formaldehyde (50-00-0)	1910.1048 1926.1148	OSHA or ACGIH TWA-8 OR STEL	Yes for ORPS, No for including worker in control program*	If > PEL/STEL/Ceiling, include exceedance statement and develop CAP with description of corrective actions
Laboratory Standard	1910.1450 NS	OSHA or ACGIH TWA-8 OR STEL	--	If > PEL, include exceedance statement and description of corrective actions
Lead, Inorganic (7439-92-1)	1910.1025 1926.62	OSHA or ACGIH TWA-8 OR STEL	Yes for ORPS Yes for including worker in control program*	If > PEL/STEL, include exceedance statement and description of corrective actions
Methylene Chloride (dichloromethane) (75-09-2)	1910.1052 1926.1152	OSHA or ACGIH TWA-8 OR STEL	Yes for ORPS, No for including worker in control program*	Within 15 days if > PEL/STEL/Ceiling, include exceedance statement and description of corrective actions with schedule for completion
Methylenedianiline (5124-30-1)	1910.1050 1926.60	OSHA or ACGIH TWA-8	Yes for ORPS, No for including worker in control program*	If > PEL/STEL/Ceiling, include exceedance statement and description of corrective actions

The only official copy is on-line at the SHSD IH Group website.
 Before using a printed copy, verify that it is current by checking the document issue date on the website.

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ANALYTE	OSHA Gen Ind. Const. Reg.	ORPS Trigger	PPE reduces exposure towards TWA-8 ?	Additional required information by OSHA to be reported to the employee
Noise	1910.95 ACGIH	OSHA or ACGIH TWA-8 OR STEL	Yes for ORPS, No for including worker in control program*	
	BNL	85dBA at any time	PPE and training	Any entry into areas above 85dBA requires PPE and training on PPE use
	ACGIH	85dBA TWA-8	medical surveillance	
Vinyl Chloride (75-01-4)	1910.1017 1926.1117	OSHA or ACGIH TWA-8 OR STEL	Yes for ORPS, No for including worker in control program*	If > PEL/STEL/Ceiling, include exceedance statement and description of corrective actions

* Note: Control Program = medical surveillance and training

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Attachment 9.3

10 CFR 851 NTS REPORTING THRESHOLDS

Management Issues Noncompliances¹
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 Occupational Injuries/Illnesses	1. Fatality/terminal illness (SC 1) ² 2. Inpatient hospitalization of <u>> 3</u> personnel (SC 1) 3. <u>> 3</u> personnel having DART cases (SC 2) 4. Personnel exposure > limits requiring medical treatment (SC 2) 5. Personnel exposure > limits (SC 3) 6. Serious occupational injury (SC 3)
Fires/Explosions	1. Unplanned fire or related event (e.g., arc flash)/explosion within primary confinement/containment boundaries (SC 1) 2. Unplanned fire/explosion in a nuclear facility that activates a fire suppression system (SC 2) 3. Unplanned fire/explosion in a non-nuclear facility (SC 3)
Failure of Hazardous Energy Controls	1. Process failure resulting in burn, shock (SC 2) 2. Process failure/discovery of uncontrolled energy source (SC 3)
Near Miss	ORPS Group 10; SC 1-4

Other Significant Conditions³
Conditions meeting the criteria of Severity Level I (serious) violations > low relative risk ⁴

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Trial Period: Contractors are encouraged to start reporting WSH noncompliances 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 noncompliances 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 "Identifying, Reporting and Tracking Nuclear Safety Noncompliances" for a description of noncompliances in the category of "Management Issues"

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 noncompliances.

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.

IH60300 Attachment 9.4 Medical Surveillance Summary of DOE/OSHA/ACGIH Medical Surveillance Requirements

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Driver	Trigger	Action/Content
<p>1910.1018: Inorganic Arsenic</p>	<p>n) Medical surveillance--(1) General--(i) Employee—covered. 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;</p> <p><i>(Follow-up action)</i></p> <p>Info to OMC</p>	<p>(ii) Examination by physician. The employer shall assure that all medical examinations and procedures are performed by or under the supervision of a licensed physician, and shall be provided without cost to the employee, without loss of pay and at a reasonable time and place. (2) Initial examinations. By December 1, 1978, for employees initially covered by the medical provisions of this section, or thereafter at the time of initial assignment to an area where the employee is likely to be exposed over the action level at least 30 days per year, the employer shall provide each affected employee an opportunity for a medical examination, including at least the following elements: (i) A work history and a medical history which shall include a smoking history and the presence and degree of respiratory symptoms such as breathlessness, cough, sputum production and wheezing. (ii) A medical examination which shall include at least the following: (3) Periodic examinations. (i) The employer shall provide the examinations specified in paragraphs (n)(2)(i) and (n)(2)(ii) at least annually for covered employees who are under 45 years of age with fewer than 10 years of exposure over the action level without regard to respirator use. (ii) The employer shall provide the examinations specified in paragraphs (n)(2)(i) and (n)(2)(ii)(B) and (C) of this section at least semiannually, and the x-ray requirement specified in paragraph (n)(2)(ii)(A) of this section at least annually, for other covered employees. (5) Information provided to the physician. The employer shall provide the following information to the examining physician: (ii) A description of the affected employee's duties as they relate to 'the employee's exposure; (iii) The employee's representative exposure 'level or anticipated exposure level; (iv) A description of any personal protective equipment used or to be used;</p>
<p>1926.1101 Asbestos- Construction</p>	<p>(m) Medical surveillance. (1) General--(i) Employees covered. (A— 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.</p> <p>Info to OMC</p>	<p>(2) Medical examinations and consultations. (i) Frequency. The employer shall make available medical examinations and consultations to each employee covered under paragraph (m)(1)(i) of this section on the following schedules: (A) Prior to assignment of the employee to an area where negative-pressure respirators are worn; (B) When the employee is assigned to an area where exposure to asbestos may be at or above the permissible exposure limit for 30 or more days per year, or engage in Class I, II, or III work for a combined total of 30 or more days per year, a medical examination must be given within 10 working days following the thirtieth day of exposure; (C) And at least annually thereafter. (D) If the examining physician determines that any of the examinations should be provided more frequently than specified, the employer shall provide such examinations to affected employees at the frequencies specified by the physician. (3) Information provided to the physician. The employer shall provide the following information to the examining physician: (ii) A description of the affected employee's duties as they relate to 'the employee's exposure; (iii) The employee's representative exposure 'level or anticipated exposure level; (iv) A description of any personal protective and respiratory equipment used or to be used; and (v) Information from previous medical examinations of the affected employee that is not otherwise available to the examining physician.</p>
<p>10CFR 850 Beryllium</p>	<p>850.33 Medical surveillance. (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.</p>	<p>(h) Medical evaluations. (2) DOE contractors shall offer a baseline medical evaluation to beryllium workers who qualify for medical surveillance. This evaluation shall include: (i) A medical and work history; (ii) A physical examination with special emphasis on the respiratory system; (iii) A chest radiograph (posterior-anterior, 14 x 17 inches) interpreted by a National Institute for Occupational Safety and Health (NIOSH) B-reader or a board-certified radiologist (unless a baseline chest radiograph is already on file); (iv) Spirometry; (v) A Be-LPT; and (vi) Any other tests deemed appropriate by the examining physician for evaluating beryllium-related health effects. (3) Periodic evaluations. DOE contractors shall offer beryllium workers who qualify for medical surveillance under this section annual medical evaluations for as long as the beryllium worker performs beryllium work at a DOE site. DOE contractors shall offer beryllium workers who have been reassigned to non beryllium DOE work an evaluation every three years. Such periodic evaluations shall include: (i) A respiratory symptoms questionnaire; (ii) A physical examination; (iii) A Be-LPT; and (iv) Any other medical evaluations deemed appropriate by the examining physician for evaluating beryllium-related health effects.</p>

Driver	Trigger	Action/Content
	Info to OMC	<p>(e) DOE contractors shall provide the SOMD with the information needed to operate and administer the medical surveillance program, including the baseline inventory, hazard assessment and exposure monitoring data, identity and nature of activities or operations on the site that are covered under the CBDPP, related duties of beryllium workers, and type of personal protective equipment used.</p> <p>(g) Information provided to the examining physician. The SOMD shall provide the following information to the examining physician:</p> <ul style="list-style-type: none"> (1) A copy of this rule; (2) A description of the beryllium worker's duties as they pertain t' beryllium exposure; (3) Records of the beryllium worker's beryllium exposure; (4) ' description of the personal protective and respiratory protective equipment in past, present, or anticipated use; and (5) Relevant information from the beryllium worker's previous medical examinations that is not otherwise available to the examining physician.
<p>1910.1030 Blood-borne Pathogens</p>	<p>(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.</p>	<p>(ii) The employer shall ensure that all medical evaluations and procedures including the hepatitis B vaccine and vaccination series and post-exposure evaluation and follow-up, including prophylaxis, are: (D) Provided according to recommendations of the U.S. Public Health Service current at the time these evaluations and procedures take place, except as specified by this paragraph (f).</p>
	<p>(2) Hepatitis B Vaccination.</p>	<p>(i) Hepatitis B vaccination shall be made available after the employee has received the training required in paragraph (g)(2)(vii)(I) and within 10 working days of initial assignment to all employees who have occupational exposure unless the employee has previously received the complete hepatitis B vaccination series, antibody testing has revealed that the employee is immune, or the vaccine is contraindicated for medical reasons.</p>
	<p>(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,</p>	<p>(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, including at least the following elements:</p> <ul style="list-style-type: none"> (ii) Identification and documentation of the source individual, unless the employer can establish that identification is infeasible or prohibited by state or local law; (iii) Collection and testing of blood for HBV and HIV serological status; (iv) Post-exposure prophylaxis, when medically indicated, as recommended by the U.S. Public Health Service; (v) Counseling; and (vi) Evaluation of reported illnesses.
	Info to OMC	<p>(4) Information Provided to the Healthcare Professional. (i) The employer shall ensure that the healthcare professional responsible for the employee's Hepatitis B vaccination 's provided a copy of this regulation. (ii) The employer shall ensure that the healthcare professional evaluating an employee after an exposure incident is provided the following information:</p> <ul style="list-style-type: none"> (A) A copy of this regulation; (B) A description of the exposed employee's duties as they relate to 'the exposure incident; (C) Documentation of the route(s) of exposure and circumstances under which exposure occurred; (D) Results of the source individual's blood testing, if available; and (E) All medical records relevant to the appropriate treatment of the employee including vaccination status which are the employer's responsibility to maintain.

Driver	Trigger	Action/Content
<p>1910.1027: Cadmium</p>	<p>(1) Medical surveillance (i) (A) 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, (B) 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.</p> <p>Info to OMC</p>	<p>(2) Initial examination. (i) The employer shall provide an initial (preplacement) examination to all employees covered by the medical surveillance program required in paragraph (1)(1)(i) of this section.</p> <p>(4) Periodic medical surveillance. (i) For each employee who is covered under paragraph (1)(1)(i)(A) of this section, the employer shall provide at least the minimum level of periodic medical surveillance, which consists of periodic medical examinations and periodic biological monitoring. A periodic medical examination shall be provided within one year after the initial examination required by paragraph (1)(2) of this section and thereafter at least biennially. Biological sampling shall be provided at least annually, either as part of a periodic medical examination or separately as periodic biological monitoring.</p> <p>(9) Information provided to the physician. The employer shall provide the following information to the examining physician: (i) A copy of this standard and appendices; (ii) A description of the affected employee's former, current, and anticipated duties as they relate to the employee's occupational exposure to cadmium; (iii) The employee's former, current, and anticipated future levels of occupational exposure to cadmium; (iv) A description of any personal protective equipment, including respirators, used or to be used by the employee, including when and for how long the employee has used that equipment; and (v) relevant results of previous biological monitoring and medical examinations.</p>
<p>1910.120 Hawoper</p>	<p>f. Medical Surveillance (i) All employees who are or may be exposed to hazardous substances or health hazards at or above the permissible exposure limits or, if there is no permissible exposure limit, above the published exposure levels for these substances, without regard to the use of respirators, for 30 days or more a year; (ii) All employees who wear a respirator for 30 days or more a year or as required by Sec. 1910.134; (iii) All employees who are injured, become ill or develop signs or symptoms due to possible overexposure involving hazardous substances or health hazards from an emergency response or hazardous waste operation; and (iv) Members of HAZMAT teams.</p>	<p>(3) Frequency of medical examinations and consultations. Medical examinations and consultations shall be made available by the employer to each employee covered under paragraph (f)(2) of this section on the following schedules: (i) For employees covered under paragraphs (f)(2)(i), (f)(2)(ii), and (f)(2)(iv): (A) Prior to assignment; (B) At least once every twelve months for each employee covered unless the attending physician believes a longer interval (not greater than biennially) is appropriate; (C) At termination of employment or reassignment to an area where the employee would not be covered if the employee has not had an examination within the last six months; (D) As soon as possible upon notification by an employee that the employee has developed signs or symptoms indicating possible overexposure to hazardous substances or health hazards, or that the employee has been injured or exposed above the permissible exposure limits or published exposure levels in an emergency situation; (E) At more frequent times, if the examining physician determines that an increased frequency of examination is medically necessary. (ii) For employees covered under paragraph (f)(2)(iii) and for all employees including those of employers covered by paragraph (a)(1)(v) who may have been injured, received a health impairment, developed signs or symptoms which may have resulted from exposure to hazardous substances resulting from an emergency incident, or exposed during an emergency incident to hazardous substances at concentrations above the permissible exposure limits or the published exposure levels without the necessary personal protective equipment being used: (A) As soon as possible following the emergency incident or development of signs or symptoms; (B) At additional times, if the examining physician determines that follow-up examinations or consultations are medically necessary.</p>

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Driver	Trigger	Action/Content
	Info to OMC	<p>(6) Information provided to the physician. The employer shall provide one copy of this standard and its appendices to the attending physician, and in addition the following for each employee:</p> <ul style="list-style-type: none"> (i) A description of the employee's duties as they relate to the employee's exposures. (ii) The 'employee's exposure levels or anticipated exposure levels. (iii) A description of any personal protective equipment used or to be used. (iv) Information from previous medical examinations of the employee which is not readily available to the examining physician. <p>(v) Information required by Sec. 1910.134.</p>
<p>OSHA Regulated Chemicals with 29CFR 1910.1450 Lab Standard use only</p>	<p>1910.1045: Acrylonitrile; 110.1028: Benzene; 1910.1010: Benzidine; 1910.1051: 1,3-Butadiene; 1910.1015: 4-Dimethyl aminoazobenzene; 1910.1047: Ethylene oxide; 1910.1012: Ethyleneimine; 1910.1048: <i>Formaldehyde</i> ; 1910.1017: <i>Vinyl Chloride</i></p> <p>(g) Medical consultation and medical examinations. (1) The employer shall provide all employees who work with hazardous chemicals an opportunity to receive medical attention, including any follow-up examinations which the examining physician determines to be necessary, under the following circumstances: (i) Whenever an employee <u>develops signs or symptoms</u> associated with a hazardous chemical to which the employee may have been exposed in the laboratory,</p>	<p>(i) 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. (ii) 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. (iii) 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.</p>
	Info to OMC	<p>(3) Information provided to the physician. The employer shall provide the following information to the physician: (i) The identity of the hazardous chemical(s) to which the employee may have been exposed; (ii) A description of the conditions under which the exposure occurred including quantitative exposure data, if available; and (iii) A description of the signs and symptoms of exposure that the employee is experiencing, if any.</p>
<p>1926.62 Lead- Construction</p>	<p>(j)(1)(i) The employer shall make available <i>initial medical surveillance</i> to employees occupationally exposed on any day to lead at or above the action level.</p> <p>(j)(1)(ii) The employer shall institute a <i>medical surveillance program</i> 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;</p>	<p>(j)(1)(i) Initial medical surveillance consists of biological monitoring in the form of blood sampling and analysis for lead and zinc protoporphyrin levels.</p> <p>(j)(2)(2)(i) Blood lead and ZPP level sampling and analysis. The employer shall make available biological monitoring in the form of blood sampling and analysis for lead and zinc protoporphyrin levels to each employee covered under paragraphs (j)(1)(i) and (ii) of this section on the following schedule: (A) For each employee covered under paragraph (j)(1)(ii) of this section, at least every 2 months for the first 6 months and every 6 months thereafter;</p>

Driver	Trigger	Action/Content
	<p><i>(Follow-up action based on previous blood levels)</i></p> <p>Info to OMC</p>	<p>(j)(2)(1)(B) For each employee covered under paragraphs (j)(1) (i) or (ii) of this section whose last blood sampling and analysis indicated a blood lead level at or above 40 $\mu\text{g/dl}$, at least every two months. This frequency shall continue until two consecutive blood samples and analyses indicate a blood lead level below 40 $\mu\text{g/dl}$; and</p> <p>(j)(2)(1)(C) For each employee who is removed from exposure to lead due to an elevated blood lead level at least monthly during the removal period.</p> <p>(j)(2)(2)(ii) Follow-up blood sampling tests. Whenever the results of a blood lead level test indicate that an employee's blood lead level exceeds the numerical criterion for medical removal under paragraph (k)(1)(i) of this section, the employer shall provide a second (follow-up) blood sampling test within two weeks after the employer receives the results of the first blood sampling test.</p> <p>(j)(3) Medical examinations and consultations—(i) Frequency. The employer shall make available medical examinations and consultations to each employee covered under paragraph (j)(1)(ii) of this section on the following schedule:</p> <p>(A) At least annually for each employee for whom a blood sampling test conducted at any time during the preceding 12 months indicated a blood lead level at or above 40 $\mu\text{g/dl}$;</p> <p>(B) As soon as possible, upon notification by an employee either that the employee has developed signs or symptoms commonly associated with lead intoxication, that the employee desires medical advice concerning the effects of current or past exposure to lead on the employee's ability to procreate a healthy child, that the employee is pregnant, or that the employee has demonstrated difficulty in breathing during a respirator fitting test or during use; and</p> <p>(C) As medically appropriate for each employee either removed from exposure to lead due to a risk of sustaining material impairment to health, or otherwise limited pursuant to a final medical determination.</p> <p>(A) The employer shall provide an initial physician conducting a medical examination or consultation under this section with the following information:</p> <p>(2) A description of the affected employee's duties as they relate to the employee's exposure;</p> <p>(3) The employee's exposure level or anticipated exposure level to lead and to any other toxic substance (if applicable);</p> <p>(4) A description of any personal protective equipment used or to be used;</p> <p>(5) Prior blood lead determinations; and</p> <p>(6) All prior written medical opinions concerning the employee in the employer's possession or control.</p> <p>(B) The employer shall provide the foregoing information to a second or third physician conducting a medical examination or consultation under this section upon request either by the second or third physician, or by the employee.</p>
<p>1910.1025 Lead- General Industry</p>	<p>(j)(1)(i) The employer shall institute a medical surveillance program for all employees who are or may be exposed above the action level for more than 30 days per year.</p> <p><i>(Follow-up action based on previous blood levels)</i></p>	<p>(j)(2)(i)Blood lead and ZPP level sampling and analysis. The employer shall make available biological monitoring in the form of blood sampling and analysis for lead and zinc protoporphyrin levels to each employee covered under paragraph (j)(1)(i) of this section on the following schedule:</p> <p>(j)(2)(i)(A) At least every 6 months to each employee covered under paragraph (j)(1)(i) of this section;</p> <p>(j)(3)(i)(B) (Medical Examination) Prior to assignment for each employee being assigned for the first time <u>to an area</u> in which airborne concentrations of lead are at or above the action level;</p> <p>(j)(2)(i)(B) At least every two months for each employee whose last blood sampling and analysis indicated a blood lead level at or above 40 $\mu\text{g}/100\text{ g}$ of whole blood. This frequency shall continue until two consecutive blood samples and analyses indicate a blood lead level below 40 $\mu\text{g}/100\text{ g}$ of whole blood; and</p> <p>(j)(2)(i)(C) At least monthly during the removal period of each employee removed from exposure to lead due to an elevated blood lead level.</p> <p>(j)(3)(i) Frequency. The employer shall make available medical examinations and consultations to each employee covered under paragraph (j)(1)(i) of this section on the following schedule:</p> <p>(j)(3)(i)(A) At least annually for each employee for whom a blood sampling test conducted at any time during the preceding 12 months indicated a blood lead level at or above 40 $\mu\text{g}/100\text{ g}$;</p> <p>(j)(3)(i)(C) As soon as possible, upon notification by an employee either that the employee has developed signs or symptoms commonly associated with lead intoxication, that the employee desires medical advice concerning the effects of current or past exposure to lead on the employee's ability to procreate a healthy child, or that the employee has demonstrated difficulty in breathing during a respirator fitting test or during use; and</p>

Driver	Trigger	Action/Content
	<p><i>Info to OMC</i></p>	<p>(iv) Information provided to examining and consulting physicians. (A) The employer shall provide an initial physician conducting a medical examination or consultation under this section with the following information: (2) A description of the affected employee's duties as they relate to the employee's exposure; (3) The employee's exposure level or anticipated exposure level to lead and to any other toxic substance (if applicable); (4) A description of any personal protective equipment used or to be used; (5) Prior blood lead determinations; and (6) All prior written medical opinions concerning the employee in the employer's possession or control. (*) The employer shall provide the foregoing information to a second or third physician conducting a medical examination or consultation under this section upon request either by the second or third physician, or by the employee.</p>
<p>1910.1052: <i>Methylene Chloride</i></p>	<p>(j) Medical surveillance--(1) Affected employees. T— employer shall make medical surveillance available for employees who are or may be exposed to MC as follows: (i) 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; (ii) 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; (iii) During an emergency.</p> <p><i>Info to OMC</i></p>	<p>(4)(i) Initial surveillance. The employer shall provide initial medical surveillance under the schedule provided by paragraph (n)(2)(iii) of this section, or before the time of initial assignment of the employee, whichever is later. (ii) Periodic medical surveillance. The employer shall update the medical and work history for each affected employee annually. The employer shall provide periodic physical examinations, including appropriate laboratory surveillance, as follows: (A) For employees 45 years of age or older, within 12 months of the initial surveillance or any subsequent medical surveillance; and (B) For employees younger than 45 years of age, within 36 months of the initial surveillance or any subsequent medical surveillance.</p> <p>8) Information provided to the physician or other licensed health care professional. The employer shall provide the following information to a physician or other licensed health care professional who is involved in the diagnosis of MC-induced health effects: (i) A copy of this section including its applicable appendices; (ii) A description of the affected employee's past, current and anticipated future duties as they relate to the employee's MC exposure; (iii) The employee's former or current exposure levels or, for employees not yet occupationally exposed to MC, the employee's anticipated exposure levels and the frequency and exposure levels anticipated to be associated with emergencies; (iv) A description of any personal protective equipment, such as respirators, used or to be used; and (v) Information from previous employment-related medical surveillance of the affected employee which is not otherwise available to the physician or other licensed health care professional.</p>
<p>1910.95 <i>Noise</i></p>	<p>OSHA: Employees who are exposed to noise at or above an 8-hour time-weighted average of 85 decibels</p> <p>ACGIH: when workers are exposed to noise at or above the TLVs@.</p>	<p>(2) The training program shall be repeated annually for each employee included in the hearing conservation program.</p> <p>A hearing conservation program with all its elements including audiometric testing is necessary</p>
<p>1910.97 <i>Non-Ionizing Radiation</i></p>	<p>No specific training</p>	
<p><i>Static Magnetic Fields</i> BNL SBMS</p>	<p>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.</p>	

Driver	Trigger	Action/Content
1910.1017 Vinyl Chloride	Employee engaged in vinyl chloride or polyvinyl chloride operations	- at the employee's first training and indoctrination program, and - annually thereafter.

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Driver	Trigger	Action/Content	Frequency/ Requalification
1910.1045 <i>Acrylonitrile</i>	(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.	Training program include (A) The information in OSHA standard and its appendixes A and B; (B) The quantity, location, manner of use, release, or storage of AN, of operations which could result in exposure to AN & protective steps; (C) respirators and protective clothing; (D) medical surveillance program; (E) emergency procedures; (F) engineering and work practice controls	<ul style="list-style-type: none"> - At the time of initial assignment, - Upon institution of the training program, - At least annually thereafter
1910.1018 Arsenic, Inorganic	(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.	<ul style="list-style-type: none"> - At the time of initial assignment - At least annually
1910.1028 <i>Benzene</i>	(j)(3)(i) 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.	Training program include - Specific information on benzene from 1910.1200, - Contents of the OSHA standard including Appendixes A and B, and - Indicate to them where the standard is available; - Describe the medical surveillance program required under paragraph (i) of this section, and - Explain the information contained in OSHA Appendix C.	<ul style="list-style-type: none"> - 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. - Training at least annually thereafter.
<u>10CFR 850</u> Beryllium	Sec. 850.36 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.	<ul style="list-style-type: none"> - before or at the time of initial assignment and - at least annually thereafter.
1910.1030 <i>Blood-borne Pathogens</i>	(2)(i) Employees with occupational exposure	Training contain at a minimum the following elements: (A) OSHA standard and an explanation of its contents; (B) epidemiology and symptoms of bloodborne diseases; (C) modes of transmission of bloodborne pathogens; (D) exposure control plan and the means by which the employee can obtain a copy of the written plan; (E) methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials; (F) use and limitations of methods that will prevent or reduce exposure; (G) personal protective equipment; (H) basis for selection of personal protective equipment; (I) hepatitis B vaccine; (J) emergency involving blood or other potentially infectious materials; (K) procedure to follow if an exposure incident occurs; (L) post-exposure evaluation following an exposure incident; (M) signs and labels and/or color coding	<ul style="list-style-type: none"> - At the time of initial assignment to tasks where occupational exposure may take place; - At least annually thereafter.
	(2)(ix) Employees in HIV or HBV research laboratories and HIV or HBV production facilities	Training in addition to the above training requirements: (A) employees demonstrate proficiency in standard microbiological practices and techniques and in the practices and operations specific to the facility (B) employees have prior experience in the handling of human pathogens or tissue cultures before working with HIV or HBV. (C) training to employees who have no prior experience in handling human pathogens. Initial work activities shall not include the handling of infectious agents.	<ul style="list-style-type: none"> - initial training
1910.1013 <i>Butadiene</i>	(l)(2) All employees exposed to BD	The employer shall provide with information and training in accordance with the requirements of the Hazard Communication Standard, 29 CFR 1910.1200, 29 CFR 1915.1200, and 29 CFR 1926.59.	

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Driver	Trigger	Action/Content	Frequency/ Requalification
	(l)(2)(ii) Employees potentially exposed at or above the action level or the STEL	Training program inform of: (A) The health hazards associated with BD exposure, and the purpose and a description of the medical screening and surveillance program required by this section; (B) The quantity, location, manner of use, release, and storage of BD and the specific operations that could result in exposure to BD, especially exposures above the PEL or STEL; (C) The engineering controls and work practices associated with the employee's job' assignment, and emergency procedures and personal protective equipment; (D) The measures employees can take to protect themselves from exposure to BD. (E) The contents of the OSHA standard and its appendices, and (F) The right of each employee exposed to BD at or above the action level or STEL to obtain medical examinations as required by paragraph (j) of this section at no cost to the employee	<ul style="list-style-type: none"> - Prior to or at the time of initial assignment to a job potentially involving exposure to BD at or above the action level or STEL - At least annually thereafter.
1910.1027 Cadmium	(m)(4) Employees who are potentially exposed to cadmium	Training program inform of: (A) health hazards, with special attention to the information incorporated in appendix A to this section; (B) quantity, location, manner of use, release, and storage of cadmium in the workplace and the specific nature of operations that could result in exposure to cadmium, especially exposures above the PEL; (C) engineering controls and work practices associated with the employee's job' assignment; (D) measures employees can take to protect themselves from exposure to cadmium,; (E) respirators and protective clothing; (F) medical surveillance program (G) The contents of the OSHA standard and its appendices; and (H) The employee's rights of access to records.	<ul style="list-style-type: none"> - Prior to or at the time of initial assignment to a job involving potential exposure to cadmium and - At least annually thereafter.
1910.1047 Ethylene Oxide	(j)(3) Employees who are potentially exposed to EtO at or above the action level or above the excursion limit	Information and training on (A) The requirements of the OSHA standard with an explanation of its contents, including Appendices A and B; (B) Any operations in their work area where EtO is present; (C) The location and availability of the written EtO final rule; and (D) The medical surveillance program required with an explanation of the information in Appendix C. (A) Methods and observations that may be used to detect the presence or release of EtO in the work area (such as monitoring conducted by the employer, continuous monitoring devices, etc.); (B) The physical and health hazards of EtO; (C) The measures employees can take to protect themselves from hazards associated with EtO exposure, including specific procedures the employer has implemented to protect employees from exposure to EtO, such as work practices, emergency procedures, and personal protective equipment to be used; and (D) The details of the hazard communication program developed by the employer, including an explanation of the labeling system and how employees can obtain and use the appropriate hazard information.	<ul style="list-style-type: none"> - At the time of initial assignment and - At least annually thereafter.
1910.1048 Formaldehyde	(n)(1)l employees who are assigned to workplaces where there is exposure to formaldehyde (at or above 0.1 ppm)	Training program include: (i) A discussion of the contents of this regulation and the contents of the Material Safety Data Sheet. (ii) The purpose for and a description of the medical surveillance program (A) A description of the potential health hazards associated with exposure to formaldehyde and a description of the signs and symptoms of exposure to formaldehyde . (B) Instructions to immediately report to the employer the development of any adverse signs or symptoms that the employee suspects is attributable to formaldehyde exposure. (iii) Description of operations in the work area where formaldehyde is present and an explanation of the safe work practices appropriate for limiting exposure to formaldehyde in each job; (iv) The purpose for, proper use of, and limitations of personal protective clothing and equipment; (v) Instructions for the handling of spills, emergencies, and clean-up procedures; (vi) An explanation of the importance of engineering and work practice controls for employee protection and any necessary instruction in the use of these controls; and (vii) A review of emergency procedures including the specific duties or assignments of each employee in the event of an emergency.	<ul style="list-style-type: none"> - At the time of initial assignment, - Whenever a new exposure to formaldehyde is introduced into the work area. - Repeated at least annually.

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Driver	Trigger	Action/Content	Frequency/ Requalification
Lasers BNL-SBMS	Both basic and job-specific laser safety training are required and provided for laser users and temporary visitors, or guest laser users working in a Class 3b and Class 4 laser controlled area	<p>Basic Laser Safety Training Each resident laser user, temporary visitor, or guest takes Basic <u>Laser Safety Training</u> from the <u>BNL Training Web Site</u> before beginning work.</p> <p>Job-Specific Training</p> <ul style="list-style-type: none"> Each resident laser user, temporary visitor, or guest reads and signs the applicable Laser Controlled Area Standard Operating Procedure(s) before beginning work. The Laser Owner/Operator conducts an orientation for the trainee of the laser operation and its controlled area requirements. The Laser Owner/Operator ensures that adequate training has been provided to laser users for operating lasers for which they are responsible. 	Basic laser safety training must be retaken every 2 years
1926.62 Lead-Construction	(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)	Training covering: (i) content of OSHA standard and its appendices; (ii) nature of the operations which could result in exposure to lead above the action level; (iii) respirators; (iv) medical surveillance program, (v) engineering controls and work practices, (vi) any compliance plan in effect; (vii) chelating agents, and (viii) employee's right of access to records under 29 CFR 1910.20.	- prior to the time of job assignment - At least annually for each employee who is subject to lead exposure at or above the action level on any day.
1910.1025 Lead-General Industry	(l)(1)(i) Workplace in which there is a potential exposure to airborne lead at any level (l)(1)(ii) Employees who are subject to exposure to lead at or above the action level or for whom the possibility of skin or eye irritation exists.	Inform employees of the content of OSHA Appendices A and B. Training covering: (A) OSHA standard and its appendices; (B) operations which could result in exposure to lead above the action level; (C) Respirators; (D) Medical surveillance program; (E) Engineering controls and work practices; (F) Contents of any compliance plan in effect; and (G) chelating agents	- Prior to the time of initial job assignment for those employees subsequently covered by this paragraph. - Repeated at least annually for each employee.
1910.1052: Methylene Chloride	(l)(1) Employee assigned to a job involving potential exposure to MC. (ii) Employee's exposure to airborne concentrations exceeds or can reasonably be expected to exceed the action level	Training program on the requirements of OSHA standard and its appendices, as well as how to access or obtain a copy of it in the workplace; Training program to inform: a. The quantity, location, manner of use, release, and storage of MC and the specific operations in the workplace that could result in exposure to MC, particularly noting where exposures may be above the 8-hour TWA PEL or STEL; b. Train each as required under the Hazard Communication standard at 29 CFR 1910.1200, 29 CFR 1915.1200, or 29 CFR 1926.59, as appropriate.	- Prior to or at the time of initial assignment to a job involving potential exposure to MC. - Re-train as necessary to ensure that each employee exposed above the action level or the STEL maintains the requisite understanding of the principles of safe use and handling of MC in the workplace. - Whenever workplace changes increase employee exposure and exceed or can reasonably be expected to exceed the action level.
1910.1050 Methylene Dianiline	(k)(3)(i)	Information and training on MDA, in accordance with 29 CFR 1910.1200(h), (k)(3)(ii), and (A) Provide an explanation of the contents of this section, including appendices A and B, and indicate to employees where a copy of the standard is available; (B) Describe the medical surveillance program required under paragraph (m) of this section, and explain the information contained in Appendix C; and (C) Describe the medical removal provision required under paragraph (m) of this section.	- at the time of initial assignment and - at least annually thereafter.

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1910.95 Noise	(k)(1) for all employees who are exposed to noise at or above an 8-hour time-weighted average of 85 decibels,	(2) Information provided in the training program shall be updated to be consistent with changes in protective equipment and work processes. (3) The employer shall ensure that each employee is informed of the following: (i) The effects of noise on hearing; (ii) The purpose of hearing protectors, the advantages, disadvantages, and attenuation of various types, and instructions on selection, fitting, use, and care; and (iii) The purpose of audiometric testing, and an explanation of the test procedures.	(2) The training program shall be repeated annually for each employee included in the hearing conservation program.
	ACGIH: when workers are exposed to noise at or above the TLVs@.	A hearing conservation program with all its elements including audiometric testing is necessary	
1910.97 Non-Ionizing Radiation	None	none	
OSHA Regulated Chemicals 13 Carcinogens 4-Nitro-biphenyl; alpha-Naphthylamine; Methylchloromethyl ether; 3,3'-Dichloro-benzidine (and its salts); bisChloromethyl ether; beta-Naphthylamine; Benzidine; 4-Aminodiphenyl;; Ethyleneimine;; beta- Propio-lactone;; 2-Acetylamino- luorine;; 4-Dimethyl-aminoazobenezene; ; N-Nitrosodi-methylamine			
	(e)(5)(i) Each employee prior to being authorized to enter a regulated area	Training and indoctrination including, but not necessarily limited to: (A) The nature of the carcinogenic hazards of a carcinogen addressed by this section, including local and systemic toxicity; (B) The specific nature of the operation involving a carcinogen addressed by this section that could result in exposure; (C) The purpose for and application of the medical surveillance program, including, as appropriate, methods of self-examination; (D) The purpose for and application of decontamination practices and purposes; (E) The purpose for and significance of emergency practices and procedures; (F) The employee's specific role in emergency procedures; (G) Specific information to aid the employee in recognition and evaluation of conditions and situations which may result in the release of a carcinogen addressed by this section; (H) The purpose for and application of specific first aid procedures and practices; (I) A review of the OSHA standard (J) Specific emergency procedures shall be prescribed, and posted, and employees shall be familiarized with their terms, and rehearsed in their application.	- at the employee's first training and indoctrination program and - annually thereafter.
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.	

IH60300 Attachment 9.5 Initial or Additional Training Summary of OSHA/ACGIH Training Requirements

Rev: 01/31/06

Driver	Trigger	Action/Content	Frequency/ Requalification
<p>1910.1017 <i>Vinyl Chloride</i></p>	<p>(j) Each employee engaged in vinyl chloride or polyvinyl chloride operations</p>	<p>The program shall include:</p> <ul style="list-style-type: none"> (i) The nature of the health hazard from chronic exposure to vinyl chloride including specifically the carcinogenic hazard; (ii) The specific nature of operations which could result in exposure to vinyl chloride in excess of the permissible limit and necessary protective steps; (iii) The purpose for, proper use, and limitations of respiratory protective devices; (iv) The fire hazard and acute toxicity of vinyl chloride, and the necessary protective steps; (v) The purpose for and a description of the monitoring program; (vi) The purpose for, and a description of, the medical surveillance program; (vii) Emergency procedures; (viii) Specific information to aid the employee in recognition of conditions which may result in the release of vinyl chloride; and (ix) A review of this standard 	<ul style="list-style-type: none"> - at the employee's first training and indoctrination program, and - annually thereafter.

**Action when Exposure Monitoring Results Exceed
Job Performance Measure (JPM) Completion Certificate**

Candidate's Name	Life Number:
<input type="checkbox"/> SHSD IH Professional <input type="checkbox"/> Limited Scope IH Professional	

SHSD Procedure Knowledge

Practical Skill Evaluation: Demonstration of Evaluation Methodology

Criteria	Qualifying Performance Standard	Unsat.	Recov.	Satisf.
1. Exposure Assessment Strategy	Demonstrates sufficient knowledge of the principles in IH60500 Fundamentals of the BNL Exposure Assessment Strategy			
2. Notification of Employees	Knows the requirement for reporting results to employees as specified in IH60500			
3. Exposure Standards	Demonstrates knowledge of each applicable occupational exposure limit, action level, TLV, PEL, STEL, etc.			
4. Analysis of data	Shows how to perform the data analysis to assess potential exposure to the worker.			
5. Exposure Control techniques	Demonstrates knowledge of engineering controls, administrative controls, and personal protective equipment and operation adjustments that can mitigate or eliminate hazards.			
6. ORPS Reporting	Knows the criteria that trigger ORPS notification and can describe the process to begin reporting the incident.			
7. 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.			
8. 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.			

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

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

Evaluator Signature:	Date:
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