

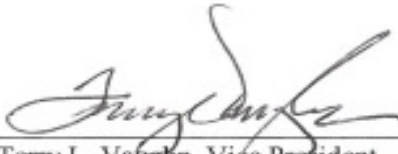
Hanford Site Beryllium Work Permit (BWP) and Hazard Assessment Procedure

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management



U.S. DEPARTMENT OF
ENERGY

Hanford Site Beryllium Work Permit (BWP) and Hazard Assessment Procedure
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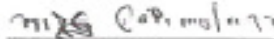
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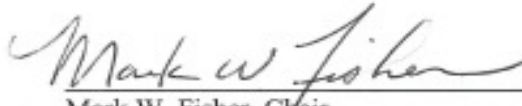
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1.0 PURPOSE AND SCOPE

This Hanford Site Wide Beryllium Work Permit (BWP) and Hazard Assessment Procedure, herein called the “Procedure” establishes the process and methods to:

- Evaluate the potential for employee exposure to beryllium;
- Evaluate the potential for beryllium contamination spread;
- Determine the methods to document the requirements and controls necessary to conduct work safely and minimize exposures;
- Document the job specific hazard assessment process;
- Communicate the beryllium hazards associated with a specific work activity; and
- Implement and standardize controls for all work activities in beryllium-regulated areas and beryllium-controlled areas.

This Procedure establishes the methods for the preparation and use of the BWP. Adherence to the processes described herein is mandatory to all Hanford contractors through reference in DOE-0342, *Hanford Site Chronic Beryllium Disease Prevention Program (CBDPP)*, herein called the “Program.” This Procedure, in conjunction with the Program, requires implementation of controls necessary to minimize the exposure to beryllium of employees working at Hanford. The Program implements employer requirements for Hanford found in Title 10, *Code of Federal Regulations* (CFR), Part 850, “Chronic Beryllium Disease Prevention Program” (10 CFR 850). This Program also provides consistent employer implementation practices for 10 CFR 850 requirements across the Hanford Site.

This Procedure applies to Hanford contractors who are responsible for facilities where beryllium activities may have previously been conducted and to any current activities that involve actual or potential exposures to beryllium. This Program does not apply to current or future laboratory or laboratory-scale operations (as defined by the Occupational Safety and Health Administration [OSHA]) involving beryllium that are subject to the requirements of 29 CFR 1910.1450, “Occupational Exposure to Hazardous Chemicals in Laboratories.” However, present laboratory use of beryllium will be documented on facility fact sheets. The Program covers Hanford workers who have previously been exposed or currently have the potential for exposure to beryllium while working at Department of Energy (DOE) sites.

2.0 ROLES AND RESPONSIBILITIES

2.1 Project Industrial Hygienist (IH)/Certified Industrial Hygienist (CIH)

The Beryllium Hazard Assessment shall be conducted by a person with sufficient knowledge and experience to perform such activity (e.g., Project industrial hygienist [IH] or assigned certified industrial hygienist [CIH]). Work planners, supervisory staff and employees familiar with the work shall be used as resources in completing the Beryllium Hazard Assessment Form.

2.2 Project Affiliated IH

A verification signature is required by a separate project affiliated IH for validation purposes of the hazard assessment.

2.3 Management

Management shall ensure all employees have been given the BWP to read prior to the employee conducting any Beryllium activities in a Beryllium Controlled Area (BCA) or Beryllium Regulated Area (BRA). Worker training and medical qualifications are required to be verified by management prior to the worker performing beryllium activities.

2.4 Eligible BWP Worker

Only employees who have received and are current on “Be Assigned Worker Training,” (Course 004100) or equivalent and medically cleared by the site medical provider to perform Beryllium activities are qualified to work in a BCA or BRA or handle contaminated or potentially contaminated material/items.

3.0 TRAINING REQUIREMENTS

Employees performing the actions of this Procedure must be appropriately trained to fulfill the requirements of this Procedure. The level of an employee’s knowledge of the requirements of this Procedure may vary.

An employee’s level of training shall be adequate to comply with the requirements described within this Procedure and based on the employee’s level of participation.

4.0 PROCEDURE

4.1 Site Condition Walk Down

A site condition walk down of the specific area is required as part of the Hazard Assessment process. The walk down is performed to visually inspect the area for beryllium exposure hazards as well as additional hazards that may affect the safety of the workers. If it is not feasible to conduct a site condition walk down due to ALARA or other safety considerations, enter N/A in

the Site Condition Walk-Down Date space in the top section of the Hazard Assessment Form, and document the reasons for not conducting the walk down in additional comments of section 3.0 of the form.

When performing the walk down during the planning of the work activity, consideration to the proper physical barriers (e.g. doors, gates, fencing, containments, other engineering controls) shall be given to establish an area to adequately control access/egress and the spread of contamination and/or exposure. The BCA/BRA may be expanded or reduced to accomplish proper controls.

4.2 Hazard Assessment Form

4.2.1 Prepare the Hazard Assessment Form

The Chronic Beryllium Disease Prevention Program requires contractors to use a risk-based and graded approach when assessing beryllium exposure hazards/risks.

The controls identified by the hazard assessment will be documented on the BWP. Any supporting documentation (e.g. photos, maps, and additional data) shall be attached to the back of the form in support of the hazard assessment results and to aid in identifying specific areas of exposure/contamination concern.

The Hazard Assessment Form and the BWP are used to document the results of the hazard assessment and is part of the work control/planning process.

The Hazard Assessment Form and BWP shall be incorporated into each of the specific work documents they support.

Each main section of the Hazard Assessment Form contains specific information required to adequately identify the level of hazards expected during a specific work activity. This information is required to develop and prepare the BWP to conduct specific work activities within the area specified on the Beryllium Hazard Assessment Form.

The Hazard Assessment form is used to document the requirements needed to conduct work for a specific activity within a specific BCA or BRA. It combines historical data and present conditions to establish the required information used to create a job specific BWP.

The Hazard Assessment Form is valid until a revision is needed but no longer than one year after the review date, and shall be completed using the following direction:

Section	Title	Required Information
	Header	Enter the Identification Number of the Beryllium Baseline Inventory Assessment that was performed on the specific location the Beryllium activity is to take place. Once a BWP is generated from the Hazard Assessment Form, enter the number of the BWP/Hazard Assessment.

Section	Title	Required Information
		<p>print/sign/date the form indicating the Form is accurate.</p> <p>Incorporate the completed Hazard Assessment Form into the work document(s) for which it supports.</p>

4.2.2 Use of the Beryllium Hazard Assessment Review Record

The Hazard Assessment shall be reviewed for accuracy when changes in conditions or to work documents are made that could affect the validity of the Hazard Assessment/BWP and updates/revisions to the BWP made when the Hazard Assessment review requires.

The Hazard Assessment review shall be documented within the work package or on the *Beryllium Hazard Assessment Review Record*. If the review is documented within a work package, a note shall also be made summarizing the change that caused the review to occur.

4.3 Hanford Job Specific Beryllium Work Permit

4.3.1 Preparing the Hanford Job Specific Beryllium Work Permit (BWP)

For purpose of this Procedure, job specific means a well defined and explained specific work activity within a specific BCA/BRA. Any additional activities identified after the BWP is in use, shall require an update/revision to both the BWP and Hazard Assessment.

The Beryllium Work Permit is completed using the information found in the Beryllium Hazard Assessment.

A record copy of the BWP shall be completed electronically; hand written BWP's shall not be used as record copy.

All sections of the BWP shall be acknowledged by either a check mark or an "X". If a section is not required, then write N/A next to the section for which the N/A applies.

The BWP shall be followed by all employees involved in the work activity. All employees are required to work under the BWP regardless of which contractor or sub-contractor prepared the BWP, or if the employee works for the prime contractor, a sub-contractor or another prime contractor.

Requirements for up-posting of areas shall be documented in the appropriate sections of the BWP as identified in the Hazard Assessment.

The BWP shall be reviewed in the pre-job/evolution briefings in its entirety to reinforce the information necessary to conduct work safely and minimize employee exposure and spread of beryllium contamination.

All employees working under the BWP, including those employed by other contractors, shall be included in pre-job/evolution briefings.

A BWP is not required for non-intrusive activities inside a Beryllium Suspect Area (BSA) or for any equipment/area labeled as Internal or Potential Internal Beryllium Contamination. If intrusive work is planned to be performed within a BSA or if breaching Internal or Potential Internal contaminated equipment/systems, a BCA or BRA shall be established requiring a hazard assessment and BWP.

A review and update/revision of the BWP shall be conducted when changes occur in the field that could impact the validity of the Job Hazard Analysis (JHA) and/or the Beryllium Hazard Assessment the BWP supports. Any revisions to the BWP shall be communicated to all employees involved in the work activity covered by the BWP in a pre-job/evolution briefing prior to recommencing work activities.

The BWP shall be prepared using the following instructions:

HANFORD JOB SPECIFIC BERYLLIUM WORK PERMIT INSTRUCTIONS

<i>Section</i>	<i>Title</i>	<i>Required Information</i>
1	HANFORD JOB SPECIFIC BERYLLIUM WORK PERMIT (BWP) No.	<p>A unique contractor or sub-contractor number shall be in the following format:</p> <ul style="list-style-type: none"> • Originating contractor or sub-contractor initials/building or specific area/last two digits of year / three digit sequential number specific to the building/specific area. • If the Beryllium Area is not located in a building, then up to a four character description of area or group performing the work may be used in place of the building number or specific area. • If BWP is being revised, enter the next sequential number in the Rev. No. space. If it is a new BWP, then enter “0” in this space. • Once the BWP has been developed, the number of the BWP shall be recorded on the Hazard Assessment Form (Header section). The BWP and the Be Hazard Assessment are considered one document, shall have the same number and are revised in conjunction with each other. • BWP number examples as follows: Contractor example: WCH-324-10-001 Sub-Contractor example: BRN-327-10-001 No Building example: CHPRC-CONX-10-001
2	WORK DOCUMENT	<p>List all work documents and/or procedures that the BWP supports. If more than one work document and/or procedure applies to the BWP, ensure that they all pertain to the work</p>

HANFORD JOB SPECIFIC BERYLLIUM WORK PERMIT INSTRUCTIONS

<i>Section</i>	<i>Title</i>	<i>Required Information</i>
		activity being performed under the BWP. If additional documents are needed once the BWP is in use, then an evaluation of the validity of the BWP must take place and determination made if a new BWP or a revision to the existing BWP must be completed.
3	DATE EFFECTIVE	Enter the month, day and year that the BWP becomes effective. (e.g., xx/xx/xx)
4	DATE EXPIRES	Enter the month, day and year the BWP is no longer valid (e.g., xx/xx/xx). This date can be no longer than 1 year from the date entered in Section Number 3 <i>Date Effective</i> .
5a/b	PRIME CONTRACTOR/ SUB CONTRACTOR	5a) Enter the prime contractor responsible for the BWP. 5b) If a sub-contractor company is preparing the BWP and performing the work activity covered by this BWP, then enter the name of the sub-contractor in section 5b.
6	LOCATION (Bldg/Area)	Enter the specific Hanford Area number, building number, and room(s) identified in the work package(s)/procedure(s) listed on the BWP for the BCAs and/or BRAs covered by the BWP. If the BCA and/or BRA are located in an area not specific to a building and room, enter specific information which adequately identifies the location of the BCA and/or BRA in the "other" block of this section. This information must match the location information recorded on the top section of the <u><i>Beryllium Hazard Assessment Form</i></u> .
7	WORK ACTIVITY DESCRIPTION	Explain the specific work activity to be performed. The description must match the activity identified in all documents/procedures identified in <u>Section Number 2 <i>Work Document No.</i></u> of the BWP.

ENTRY REQUIREMENTS

This states the basic requirements that need to be met to qualify an individual to work under the controls of the BWP as well as the requirement for updating/revising the BWP.

BERYLLIUM CONTROL INFORMATION

Sections 8-19, *Special Instructions*, shall be completed to record any pertinent instructions relating to specific controls that are not covered by the control options identified in each section. The instructions shall be listed in the appropriate section for which they pertain. If no "special instructions" are needed write N/A.

8	AREA POSTING	Check the appropriate box(s) in Section 8 from the information contained in Section 5.0 of the <u><i>Beryllium Hazard Assessment</i></u>
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HANFORD JOB SPECIFIC BERYLLIUM WORK PERMIT INSTRUCTIONS

<i>Section</i>	<i>Title</i>	<i>Required Information</i>
		<u>Form</u> to identify the type of beryllium area where the work activity will be performed in.
9	ACCESS CONTROL	Identify the type of access controls needed in Section 9 with info from the site condition walk-down and based on information contained in section 5.0 of the <u>Beryllium Hazard Assessment Form</u> .
10	ENGINEERING CONTROLS	Check the appropriate boxes in Section 10 identifying proper Engineering Controls from the information contained in Section 5.0 Engineering Controls of the <u>Beryllium Hazard Assessment Form</u> –
11	RESPIRATORY PROTECTION	Check the appropriate control boxes in Section 11 identifying proper Respiratory Protection from the information contained in Section 5.0 Respiratory Protection of the <u>Beryllium Hazard Assessment Form</u> –. If <i>FF-APR or PAPR only</i> is selected then enter the type of cartridge to be used in the space provided.
12	PROTECTIVE CLOTHING	Check the appropriate control boxes in Section 12 identifying proper Protective Clothing from the information contained in section 5.0 Protective Clothing of the <u>Be Hazard Assessment Form</u> . If work gloves is selected then denote the specific type of gloves to be worn in the space provided. If different PPE requirements are needed for support personnel, list requirements in special instructions.
13	AIR SAMPLING	Check the appropriate control boxes in Section 13 to identify air sampling requirements based on information contained in section 6.0 IH Sampling of the <u>Be Hazard Assessment Form</u> .
14	SURFACE SAMPLING	Check the appropriate control boxes in Section 14 to identify surface sampling requirements based on information contained in section 6.0 IH Sampling of the <u>Be Hazard Assessment Form</u>
15	IH COVERAGE	<p>Check the appropriate boxes in Section 15 to identify the proper IH coverage needed to support the work activity being performed as identified in section 1.0 – Work Activity Description, of the <u>Be Hazard Assessment Form</u> and based on the following direction:</p> <ul style="list-style-type: none"> • For purpose of this Procedure, the term IH refers to a member of the Industrial Hygiene Department qualified to perform the activity identified, unless otherwise specified. • <u>Pre-Job Review</u>: IH coverage is required to perform BWP review as part of the Pre-Job/Evolution but no further coverage is required during the performance of the work activity and no release/clearance surveys are needed from the BCA/BRA • <u>Release/Clearance</u>: IH coverage is required for the Pre-

HANFORD JOB SPECIFIC BERYLLIUM WORK PERMIT INSTRUCTIONS

<i>Section</i>	<i>Title</i>	<i>Required Information</i>
		<p>Job/Evolution briefing and for release/clearance surveys only.</p> <ul style="list-style-type: none"> • <u>Intermittent</u>: IH coverage is required on a periodic basis, as discussed in the Pre-Job/Evolution briefing, and when requested throughout the work activity (from the Pre-Job/Evolution briefing to the need for release/clearance surveys) • <u>Continuous</u>: IH coverage is required from the Pre-Job/Evolution throughout the entire work activity (including release/clearance surveys). Continuous coverage means an IH individual is physically present with the work crew through the entire work activity.
16	DECONTAMINATION ITEMS	Check the appropriate control boxes in Section 16 based on the method needed for proper contamination control. Use section 3.0 Hazard Description of the <i>Be Hazard Assessment Form</i> as a guideline in making these determinations.
17	DECONTAMINATION PERSONNEL	Check the appropriate control boxes in Section 17 based on methods for preventative controls needed to eliminate personnel contamination. Use section 3.0 Hazard Description of the <i>Be Hazard Assessment Form</i> –as a guideline in making these determinations.
18	WASTE LABELING/HANDLING	Check the appropriate boxes in Section 18 required for proper identification and disposition of waste generated from activities of the work activity. Label waste and equipment designated as waste with the appropriate Danger Label: <u>Contaminated with Beryllium</u> .
19	EQUIPMENT LABELING/HANDLING	Check the appropriate control boxes in Section 19 required for proper labeling and handling of equipment used during the Beryllium activity. Equipment not deemed waste with potential for internal contamination, and deemed clean on the exterior, shall be labeled as <u>Potential Internal Beryllium Contamination</u> .
20	ADDITIONAL INFORMATION	List any additional information that is, or may be pertinent to, the safety of the worker(s) while performing the work activity covered by the BWP. A statement identifying the centrally located area where personal sampling results are posted shall be recorded in this section as well as any post job requirements.

This section is intended as information only. Any special instructions are to be listed within the appropriate section of the BWP for which they pertain.

Approvals

HANFORD JOB SPECIFIC BERYLLIUM WORK PERMIT INSTRUCTIONS

<i>Section</i>	<i>Title</i>	<i>Required Information</i>
21	PREPARED BY	This identifies the individual who prepared the BWP. This person shall be knowledgeable of and experienced in the work to be performed. This individual shall be different than the individuals identified in sections 22, <i>Approved by – Operations Manager/Supervisor</i> , and section 23, <i>Approved by – Project Industrial Hygienist</i> . Printed name, signature, date and time is required to be completed.
22	APPROVED BY – OPERATIONS MANAGER/SUPERVISOR	List the management individual responsible for the work activity being performed. This individual must be different than individuals identified in Section 21 <i>Prepared by</i> , and Section 23 <i>Approved by – Project Industrial Hygienist</i> . This individual signs approval after verifying the BWP and work activity match and controls are adequate. Printed name, signature, date and time is required to be completed
23	APPROVED BY – PROJECT INDUSTRIAL HYGIENIST	This individual must be an employee from the Industrial Hygiene Department with sufficient knowledge of and experience in the work to be performed. Individual must be different than the individual identified in Section 21 <i>Prepared by</i> , and Section 22 <i>Approved by – Operations Manager/Supervisor</i> . Individual signs approval after verifying the validity of the BWP to the work activity described in all work packages/procedures listed on the BWP. Printed name, signature, date and time is required to be completed

4.3.2 Use of the Hanford Beryllium Work Permit Acknowledgement/Review Record

The BWP acknowledgement/review record shall be signed by all employees involved in the work activity following the Pre-Job/Evolution briefing.

The review record is considered the final section of the BWP.

4.3.3 Incorporation of BWP into Work Package/Procedure

Incorporate the BWP into the Work package/procedure along with the Hazard Assessment Form as one document.

5.0 CONTROL AND REVIEW OF DOCUMENTS

During the Maintenance Phase, the CBDPP Committee shall continue to provide long-term stewardship and operation of this Procedure. Configuration control of this document shall be accomplished in accordance with the process defined in DOE-0342.

6.0 RECORDS

Record Description	Submittal Responsibility	Retention Responsibility
Beryllium Hazard Assessment Form (A-6005-852)	Safety and Health Organization	Stored electronically with a copy retained in Work Package
Beryllium Hazard Assessment Review Record (A-6006-117)	Cognizant Supervisor/Manager	Stored electronically with a copy retained in Work Package
Hanford Job Specific Beryllium Work Permit (A-6006-202)	Cognizant Supervisor/Manager	Stored electronically with a copy retained in Work Package
Hanford Job Specific Beryllium Work Permit Acknowledgement/Review Record (A-6005-853)	Cognizant Supervisor/Manager	Stored electronically with a copy retained in Work Package

7.0 SOURCES

7.1 Requirements

1. 10 CFR 850, "Chronic Beryllium Disease Prevention Program," *Code of Federal Regulations*, as amended.
2. 10 CFR 851, "Worker Safety and Health Program," *Code of Federal Regulations*, as amended.
3. 29 CFR 1910, "Occupational Safety and Health Standards," *Code of Federal Regulations*, as amended.
4. DOE-0342, 2009, *Hanford Site Chronic Beryllium Disease Prevention Program (CBDPP)*

7.2 References

- [Hanford Beryllium Hazard Assessment Form \(A-6005-852\)](#)
- [Hanford Beryllium Hazard Assessment Review Record \(A-6006-117\)](#)
- [Hanford Beryllium Work Permit \(A-6006-202\)](#)
- [Hanford Job Specific Beryllium Work Permit Acknowledgment Form \(A-6005-853\)](#)

APPENDIX A: DEFINITIONS

BCA	Beryllium Controlled Area
BRA	Beryllium-Regulated Area
BWP	Beryllium Work Permit
CIH	Certified Industrial Hygienist
CFR	Code of Federal Regulations
DOE	Department of Energy
IH	Industrial Hygienist
IHT	Industrial Hygiene Technician.
PPSM	PICs, Planners, Supervisors, Managers