



RELEASE - TRANSMISSION OF REVISED MATERIAL TO BE
INCORPORATED INTO THE FEDERAL (EEOICPA) PROCEDURE MANUAL:
CHAPTER 2-1000 NON-CANCEROUS CONDITIONS.

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EXPLANATION OF MATERIAL TRANSMITTED:

This material is issued as procedural guidance to update, revise and replace portions of the text of EEOICPA Part E Procedure Manual (PM) E-500 Evidentiary Requirements for Causation, and 2-0700 Eligibility Criteria for Beryllium Illness and 2-0800 Eligibility Criteria for Silicosis in their entirety. This material is to be placed in the new Unified PM binder and is intended to stand as policy guidance for both Parts of the EEOICPA.

- This material revises the requirements for demonstrating Chronic Beryllium Disease, and clarifies that satisfaction of either the pre-1993 or post-1993 is sufficient to allow for a diagnosis of CBD under the EEOICPA.

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FILING INSTRUCTIONS:

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Replace Federal (EEOICPA) Procedure Manual Chapters E-500, 2-0700, and 2-0800 with this transmittal and Chapter 2-1000.

Distribution: List No. 3: All DEEOIC Employees
List No. 6: Regional Directors, District Directors,
Assistant District Directors, National Office Staff, and
Resource Center Staff.

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Superseded

Part 2 - Claims

1. Purpose and Scope. This chapter describes the criteria necessary to establish eligibility for non-cancerous conditions covered under Part B and/or Part E of the EEOICPA and the development of their causal relationship with toxic substance exposure at a covered Department of Energy (DOE) or Radiation Exposure Compensation Act (RECA) Section 5 facility.

Any covered occupational illness under Part B has the potential to be a covered illness under Part E, but that conversely, a covered illness under Part E is not necessarily a covered occupational illness under Part B.

2. Approved Part B Illnesses. Occupational Illnesses approved under Part B are given a presumption of toxic substance exposure and causation at a DOE or RECA Section 5 facility under Part E. In all instances when issuing a Part E Recommended Decision based on an already issued Part B acceptance, the CE only uses the findings of the original Part B Final Decision. This includes the establishment of verified covered employment, diagnosed medical condition(s), and survivor relationship to the deceased employee, if applicable. However, survivors approved under Part B also need to establish eligible survivorship under Part E and that it is "at least as likely as not" that the exposure to a toxic substance was a significant factor that aggravated, contributed to, or caused the employee's death.

Part B acceptances for atomic weapons employees, beryllium vendor employees, and DOE federal employees do not receive the above causation presumption because they are not covered under Part E. The exception to this is if the employee worked at an atomic weapons employer (AWE) facility or with a beryllium vendor (BV) that was designated as a DOE facility for remediation and the employee worked for the remediation contractor.

3. Identifying Claimed Condition as Part B, Part E, or Both. The CE first determines whether the type of claim filed is for employee benefits (i.e., Form EE-1) or for survivor benefits (i.e., Form EE-2). Then the CE reviews the condition(s) claimed, either marked or written on the form, and determines whether the claimed condition is potentially covered under Part B, Part E, or both.

3. Identifying Claimed Condition as Part B, Part E, or Both. (Continued)

Those conditions covered under Part B are beryllium sensitivity, chronic beryllium disease, chronic silicosis, and cancer. Under Part E, all conditions (not symptoms of a condition) are covered, including those covered under Part B. This includes, but is not limited to, diagnosed cancers, respiratory illnesses, cardiac illnesses, and also mental illnesses that originate from a physical condition, such as a neurological condition.

In order to accurately identify a claimed condition as covered under Part B, Part E, or both, the CE must also consider the claimed employment. Two examples describing this two-fold consideration are provided below.

a. Chronic Silicosis. For chronic silicosis coverage under Part B, the employee has to be a DOE or DOE contractor employee who was present for an aggregate of at least 250 work days during the mining of tunnels at a DOE facility located in Nevada or Alaska for tests or experiments related to an atomic weapon. However, for consideration of coverage under Part E, chronic silicosis is not subjected to this specific employment requirement; only that there is covered DOE contractor employment.

b. Covered Part E Employment Requirement. As further described in paragraph 2 above, regardless of the condition being claimed under Part E, coverage is not afforded to those employees who worked as atomic weapons employees, beryllium vendor employees, or as DOE federal employees. The exception to this is if the employee worked at an AWE facility or with a BV that was designated as a DOE facility for remediation and the employee worked for the remediation contractor. However, this employment stipulation is not applicable when the CE considers if the claimed condition is covered under Part B.

Therefore depending upon the condition and employment claimed, the CE develops each condition according to its respective criteria under Part B and/or Part E of the Act.

4. Proof of Covered Employment for Beryllium Illness.

a. Under Part B. To satisfy the employment and causation requirements, the evidence needs to establish either (1) that the employee had at least one day of verified employment at a DOE facility during a period when beryllium dust particles, or vapor may have been present at the facility; or (2) that the employee was present for at least one day at a DOE facility, or a facility owned and operated by a beryllium vendor,

b. Under Part E. To satisfy the employment and causation requirements under Part E, the employee must meet the same requirements as stated above for Part B, but the employee must be a DOE contractor or subcontractor employee.

5. Beryllium Sensitivity. Beryllium sensitivity is an allergic reaction of the immune system to the presence of beryllium in the body as a result of inhaling dust particles or fumes from beryllium. The evidence required to establish beryllium sensitivity is described under 42 U.S.C. §73841(8)(A) and the CE develops the beryllium claim accordingly, verifying whether or not the medical evidence submitted by the claimant is sufficient.

a. Testing. A claimant establishes beryllium sensitivity under Part B and/or Part E by submitting the results of either one beryllium lymphocyte proliferation test (BeLPT) or one beryllium lymphocyte transformation test (BeLTT), performed on blood or lung lavage cells, which shows abnormal or positive findings. A claimant can also establish beryllium sensitivity by submitting the results of one beryllium patch test, which shows a positive reaction.

b. Evaluation. The abnormal BeLPT/BeLTT or beryllium patch test is evaluated by a physician, with his or her findings specifically outlined (e.g., abnormal response to beryllium). A BeLPT/BeLTT or beryllium patch test exhibiting a "borderline" result is not sufficient to establish beryllium sensitivity.

The CE does not attempt to interpret the findings of the BeLPT/BeLTT or the beryllium patch test. If the test is not accompanied by a physician's interpretation, the CE

5. Beryllium Sensitivity. (Continued)

obtains the interpretation from the physician who performed the test. If the testing physician is not available, the CE obtains an evaluation from another qualified physician (e.g., a District Medical Consultant (DMC)).

c. False Negative Results. If the claimant has a history of steroid use, a false negative result on the BeLPT/BeLTT or the beryllium patch test can occur. If there is evidence that this has occurred, then the CE requests that the employee undergo a repeat BeLPT/BeLTT or beryllium patch test. If the claimant is deceased, the CE should try to obtain as much information as possible on past LPT results and possible steroid use. If exhaustive efforts produce little or no results and the evidence of record contains the normal/borderline LPT result along with a biopsy of the lung tissue showing the presence of granulomas, the CE may accept the claim.

d. Definitions. A BeLPT/BeLTT is defined as a laboratory test that examines how a type of disease-fighting blood cell, called a lymphocyte, reacts to beryllium. The blood cells' reaction to beryllium determines whether the test results are normal or abnormal. If the cells do not react very strongly to beryllium, the test result is normal; if the cells react very strongly to beryllium, the test result is abnormal.

The Bronchoalveolar Lavage Beryllium Lymphocyte Proliferation Test (BAL BeLPT) is defined as a laboratory test performed on lung tissue that is washed from the lungs. The lung wash contains lung tissue that is obtained via an intranasal insertion of a bronchoscope into the lung. When the bronchoscope is lowered into the lower lung, a saline solution is washed into the airways and retrieved (lung washing). The retrieved solution is cultured in the presence of beryllium salts. A reaction or response to the beryllium salts represents a lymphocytic process and is sufficient to establish beryllium sensitivity.

e. Benefits Under Part B. Once the medical, employment, and causation criteria have been met for a beryllium sensitivity claim under Part B, the employee is awarded

5. Beryllium Sensitivity. (Continued)

medical monitoring, treatment, and therapy for the condition effective on the date of filing. Unlike for CBD, no lump sum compensation is awarded for beryllium sensitivity under Part B.

f. Benefits Under Part E. Once the medical, employment, and causation criteria have been met for a beryllium sensitivity claim under Part E, the employee is awarded medical monitoring, treatment, and therapy for the condition effective on the date of filing. In addition, the employee is eligible for lump sum compensation for impairment and/or wage loss if the criteria for those benefits are met. If found entitled, in addition to the \$125,000 survivor benefit, the survivor may also receive lump sum compensation for wage loss.

6. Established Chronic Beryllium Disease (CBD) Before 1993, Part B. The evidence required to establish a claim for established chronic beryllium disease (CBD) under Part B of the Act is described under 42 U.S.C. §73841(13). Whether to use the pre- or post-1993 CBD criteria depends upon the totality of the medical evidence, including when the employee was tested for, diagnosed with, and/or treated for a chronic respiratory disorder.

If the earliest dated document showing that the employee was either treated for, tested or diagnosed with a chronic respiratory disorder is dated prior to January 1, 1993, the pre-1993 CBD criteria may be used. If the earliest dated document is dated after January 1, 1993, the post-1993 CBD criteria may be used. If the employee sought treatment before 1993 and the document verifies that the treatment was performed prior to January 1, 1993, but the document is dated on or after January 1, 1993, the pre-1993 CBD criteria may be used.

To establish pre-1993 CBD, the medical documentation must include at least three of the following: characteristic chest radiographic (or computed tomography (CT)) abnormalities; restrictive or obstructive lung physiology testing or diffusing lung capacity defect; lung pathology consistent with CBD; a clinical course consistent with a chronic respiratory disorder; or immunologic tests showing beryllium sensitivity (e.g., skin patch test or beryllium blood test preferred).

6. Established Chronic Beryllium Disease (CBD) Before 1993,
Part B. (Continued)

a. Characteristic Chest Radiograph (X-ray). In a chest X-ray, rays are emitted through the chest and the image is projected onto film, creating a picture of the image. Characteristic chest X-ray findings are identified by the following:

(1) Small round areas of opacity distributed throughout all of the lung fields. Mixtures of round and irregular areas of opacity are also often seen.

(2) Other characteristic X-ray findings include interstitial lung fibrosis, interstitial or pleural fibrosis (i.e., pleural fibrosis alone is not sufficient, as there has to be other findings present), and granulomas (i.e., non-calcified and non-caseating).

(a) Caseating granulomas are sometimes considered characteristic; however, the treating physician or a DMC needs to review these findings for a determination. The term "caseating" identifies necrosis (i.e., decay) in the center of a granuloma. This term was originally applied to a granuloma associated with tuberculosis or a fungal infection. A non-caseating granuloma is one without necrosis and is characteristic of CBD.

(b) Calcification in a granuloma is usually associated with the healing of the granuloma. A calcified granuloma is not characteristic of CBD.

(3) Coarse linear fibrosis is sometimes found with advanced CBD which results in progressive loss of lung volume.

b. Characteristic Computed Tomography (CT) Scan. A Computed Tomography (CT) scan uses X-rays to produce detailed pictures of structures inside the body. Each

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6. Established Chronic Beryllium Disease (CBD) Before 1993,
Part B. (Continued)

X-ray pulse lasts only a fraction of a second and represents a "slice" of the organ or area being studied. A CT scan is sometimes referred to as a CAT (computed axial tomography) scan. CT scan abnormalities indicative of CBD include the following:

(1) Consolidation, ground glass, septal thickening, diffuse nodules (different distributions), interstitial fibrosis, bronchiectasis, and honeycombing.

(2) Other CT scan findings include parenchymal nodules, septal lines, patches of ground-glass attenuation, bronchial wall thickening, and thickening of the interlobular septa. Nodules are often seen clustered together around the bronchi or in the subpleural region. Subpleural clusters of nodules sometimes form pseudo plaques. In advanced CBD, large subpleural cysts are sometimes found.

c. Radiographic Patterns. The following list represents radiographic (X-ray/CT) patterns characteristic of CBD:

<u>Chest X-ray</u>	<u>CT/*HRCT</u>
<i>Alveolar Patterns</i>	<i>Alveolar Patterns</i>
- Consolidation	- Consolidation
- Ground glass	- Ground glass
<i>Interstitial Patterns</i>	<i>Interstitial Patterns</i>
- Reticular (irregular lines)	- Septal thickening
- Diffuse Nodules	- Diffuse Nodules
- Reticulonodular	(different distributions)
	- Ground glass
<i>Interstitial Fibrosis</i>	<i>Interstitial Fibrosis</i>
- Honeycombing	- Traction Bronchiectasis
- Upper lobe retraction	- Honeycombing

*HRCT = high-resolution computed tomography

6. Established Chronic Beryllium Disease (CBD) Before 1993, Part B. (Continued)

In CBD claims, which contain the above-listed abnormalities, the DEEOIC staff accepts these diagnostic findings as either being characteristic of or denoting abnormalities consistent with CBD.

d. Restrictive or Obstructive Lung Physiology Testing or Diffusing Lung Capacity Defect. Obstruction, either severe or mild, is the most common abnormality found by spirometry. Severe obstruction prevents complete exhalation (i.e., air trapping). A definitive diagnosis of restriction (e.g., reduced lung volumes) through spirometry is not made without lung volumes. Generally, the pulmonary function studies include the physician's interpretation of whether there is restriction or obstruction.

e. Arterial Blood Gas (ABG). An ABG test is not used in lieu of a pulmonary function test. There are many factors involved in interpreting an ABG test. If the CE is unable to obtain a pulmonary function test and the ABG test is the only test available, the treating physician or a DMC needs to review the ABG test results along with the medical evidence of record to determine whether it is indicative of a restrictive or an obstructive lung physiology. An ABG test result generally does not show a diffusing lung capacity defect.

f. Pathology Report. A lung pathology that is consistent with CBD is generally identified as such in the interpretation provided by the physician within the pathology report. If no interpretation is provided, or if the CE is unsure whether the findings are consistent with CBD, the CE obtains clarification from the treating physician or a DMC.

g. Clinical course consistent with chronic respiratory disorder may include the following disorders and methods of treatment:

- (1) Hypoxemia requires supplemental oxygen and supplies.

Part 2 - Claims

6. Established Chronic Beryllium Disease (CBD) Before 1993,
Part B. (Continued)

(2) Air flow obstruction (e.g., COPD, Emphysema) and Asthma/wheezing-like symptoms require inhalers (e.g. Flovent, Advair, Serevent, Albuterol, etc.), corticosteroid drugs, bronchodilators, and oxygen therapy.

(3) Right heart failure, Cor pulmonale: Cardiology consult and subsequent management, diuretics (e.g. Lasix, HCTZ, Spironolactone, etc.), supplemental oxygen.

(4) Pulmonary Hypertension: Cardiology consult and subsequent management, supplemental oxygen.

(5) Respiratory infections (Pneumonia, Acute bronchitis): Antibiotics, sputum cultures, blood cultures, sometimes bronchoscopy.

(6) Sarcoidosis: corticosteroid drugs, such as prednisone.

h. Immunologic Tests. Examples of immunologic tests that establish beryllium sensitivity include skin patch tests and beryllium blood tests which involve the interaction of antigens with antibodies.

7. Established Chronic Beryllium Disease On/After January 1, 1993, Part B. The medical documentation needs to include an abnormal BeLPT/BeLTT performed on either blood or lung lavage cells or a positive beryllium patch test, in addition to evidence of lung pathology consistent with CBD. Proof of lung pathology consistent with CBD includes, but is not limited to: a lung biopsy showing granulomas or a lymphocytic process consistent with CBD; a computerized axial tomography (CAT) scan showing changes consistent with CBD; or a pulmonary function or exercise test showing pulmonary deficits consistent with CBD.

7. Established Chronic Beryllium Disease On/After January 1, 1993, Part B. (Continued)

a. Lung Biopsy.

(1) The term "lung biopsy" is interpreted as any sampling of lung tissue. Lung tissue samples include any one of the following:

- (a) Lung tissue obtained from whole lung specimens at the time of an autopsy;
- (b) Lung tissue obtained by open or video-assisted thoracotomy;
- (c) Lung tissue obtained by bronchoscopic transbronchial biopsy; or
- (d) Lung tissue obtained by bronchoalveolar lavage, which includes alveolar and bronchial epithelial cells, macrophages, lymphocytes, neutrophils, eosinophils, and other lung cells.

Tissue samples obtained by any one of these methods are used to document the presence of a lymphocytic process consistent with CBD.

(2) In claims that contain a normal or borderline LPT, and the lung tissue biopsy confirms the presence of granulomas consistent with CBD, the CE may accept the claim for CBD. The lung biopsy is considered the "gold standard." However, the following steps must be followed before accepting a claim in this manner.

- (a) If the claimant is living, the CE should contact the treating physician and obtain a detailed narrative report detailing the past history of the claimant's LPT results (if possible). Specifically, the physician should address whether the claimant has a past history of positive LPTs with recent normal or borderline LPT results. The CE should note that if the claimant has a history of steroid use, this may cause a false negative on the LPT result.

7. Established Chronic Beryllium Disease On/After January 1, 1993, Part B. (Continued)

(b) If the claimant is deceased, the CE should try to obtain as much information as possible on past LPT results and possible steroid use. If exhaustive efforts produce little or no results and the claim contains the normal/borderline LPT results along with a biopsy of the lung tissue showing the presence of granulomas, the CE may accept the claim.

(c) If there is no LPT and the lung tissue biopsy confirms the presence of granulomas consistent with CBD, the CE may accept the claim.

In those instances, the tissue evidence must be very obvious and the recommended decision must address all the statutory requirements for CBD claims in a well-reasoned manner (e.g., LPT negative due to steroid medication giving a "false negative.").

b. Lymphocytic Process. A lymphocytic process consistent with CBD is measured in the lungs by any one of the following methods:

- (1) Biopsies showing lymphocytes (i.e., part of the population of so-called mononuclear cells) in bronchial or interstitial (alveolar) lung tissue;
- (2) Biopsies showing non-caseating granuloma;
- (3) Bronchoalveolar lavage (BAL) showing an increase in the percentage of lymphocytes in the differential cell count (i.e., typically >10% lymphocytes is considered a BAL lymphocytosis); or
- (4) BAL Beryllium Lymphocyte Proliferation Test (BeLPT) showing that the lymphocytes washed from the lungs react/respond to beryllium salts.

An abnormal BeLPT/BeLTT, performed on either blood or lung lavage cells, or a positive beryllium patch test, in addition to lung tissue obtained through a positive BAL BeLPT showing a lymphocytic process in which a

7. Established Chronic Beryllium Disease On/After January 1, 1993, Part B. (Continued)

physician has identified as being consistent with CBD, are sufficient to support the diagnosis of CBD. This is especially important when the BAL BeLPT is the only test used to establish the diagnosis. However, the CE does not use a positive BAL BeLPT solely to support a claim for CBD on or after January 1, 1993.

c. Computerized Axial Tomography (CAT) Scan. A CAT scan uses X-rays and computers to produce an image of a cross-section of the body. For post-1993 CBD claims, the results of the CAT scan are evaluated by a physician for a determination on whether the findings are consistent with CBD.

d. Pulmonary Function or Exercise Testing. For this criterion, the treating physician or a DMC evaluates the results of the pulmonary function study or exercise tests for a determination on whether or not the deficits are consistent with CBD.

8. Established CBD Decisions, Part B. The pre-1993 CBD criteria are more generalized because before 1993, it was difficult to confirm beryllium sensitization. As such, the respiratory problems potentially related to beryllium were often misdiagnosed and thought to be related to other causal factors. After 1993, diagnostic measures reliably identified a patient's sensitivity to beryllium and linked it to the potential onset of CBD. As such, the post-1993 CBD criteria are considered significantly more accurate for confirming or negating the existence of beryllium sensitization and CBD.

a. Conflicting Medical Evidence. During the adjudication process, there are instances when the CE encounters claims containing pre-1993 medical evidence which supports a chronic respiratory disorder and meets three of the five criteria for pre-1993 CBD claims. The CE approves a claim where the evidence of record is sufficient to establish that the medical record meets either the pre- or post-1993 criteria.

Example: If a claim contains a post-1993 BeLPT with normal results and also pre-1993 medical evidence

8. Established CBD Decisions, Part B. (Continued)

which meets the pre-1993 CBD criteria (i.e., three of the five criteria are met), the CE can approve the claim based upon the pre-1993 CBD criteria, whether the employee is living or deceased.

b. Referral to a DMC. CEs should refer claims to a DMC for a medical review after all means of obtaining the evidence from the treating physician is exhausted. Referrals are also sent to a DMC when the medical reports and/or tests do not include a clear interpretation and/or if there is a specific question(s) about the medical evidence. When a referral to a DMC is made, all the medical records in the case file are sent to the DMC for review. Examples of situations when a referral is needed include:

(1) Medical test results that do not provide a clear interpretation (e.g., pathology report, BeLPT, X-ray, CT scan); and

(2) Pre-1993 and/or post-1993 CBD tests (e.g., chest X-ray, diffusion lung capacity defect, lung biopsy showing granulomas, lymphocytic process, or pulmonary function study) that do not denote abnormalities or defects, contain the finding "consistent with chronic beryllium disease", or are inconclusive.

The opinion of the DMC, when properly supported by medical rationale, carries significant probative value and is considered reliable when issuing the Recommended Decision and/or Final Decision.

c. Beryllium Sensitivity Decision When CBD Is Claimed. When CBD is claimed on Form EE-1 for a living employee, but the evidence supports the existence of beryllium sensitivity only, the CE still develops the claim for CBD.

(1) The CE advises the claimant of the medical evidence necessary to establish a claim for CBD, and provides the claimant with a period of up to 60 days for submission of additional medical evidence, with a follow up letter to the claimant after the first 30-day interval.

8. Established CBD Decisions, Part B. (Continued)

(2) If the claimant responds with additional evidence, the CE evaluates the claim and issues a Recommended Decision accepting the beryllium sensitivity (if established) and either accepting or denying the claim for CBD, based upon the totality of the medical evidence on record. If the claimant either does not respond within the allotted period of time, or provides evidence that he or she has not yet developed CBD, the CE issues a Recommended Decision accepting the claim for beryllium sensitivity (if established). The CE also sends a letter to the claimant advising that there is currently insufficient evidence of CBD, but that if the beryllium sensitivity later develops into CBD, the claimant may contact a DEEOIC Office and provide supporting medical evidence.

(3) If the claimant later advises a DEEOIC Office that the beryllium sensitivity has developed into CBD, the CE develops the case accordingly and issues a Recommended Decision based upon the medical evidence the claimant submitted.

(4) If the claimant advises that he or she wants a Recommended Decision on the CBD, despite the lack of supporting medical evidence, the CE issues a recommended denial of the CBD.

9. Beryllium Sensitivity and CBD, Part E. Causation under Part E is developed in one of two ways for beryllium sensitivity and CBD. The first way is through a positive determination under Part B. The second way is through medical evidence as described below.

a. Beryllium Sensitivity. As under Part B, beryllium sensitivity is established by one abnormal beryllium lymphocyte proliferation test (BeLPT) or BeLTT result indicating that an employee's blood showed an abnormal proliferative response to beryllium sulfate.

b. Physician Narrative. A Part B Final Decision under the EEOICPA approving beryllium sensitivity or CBD is sufficient to establish the diagnosis and causation under Part E. However, if there is no Part B decision, a

9. Beryllium Sensitivity and CBD, Part E. (Continued)

positive LPT result is required to establish a diagnosis of beryllium sensitivity and a rationalized medical report including a diagnosis of CBD from a qualified physician is required to establish CBD under Part E. The rationalized report should contain an evaluation of the employee's medical condition and a finding that it is "at least as likely as not" that exposure to beryllium at a DOE covered facility was a significant factor in aggravating, contributing to, or causing the CBD.

c. Referral to DMC. The CE thoroughly reviews all the medical evidence. If the CE determines that the totality of the evidence is inconclusive in establishing the diagnosis or causation for the claimed condition, a DMC referral is warranted, especially if the treating physician is unavailable or unable to provide the necessary information.

d. Causal Relationship, Survivor Development. When a survivor claim for CBD is accepted under Part B and an "Other Chronic Pulmonary Disease" is listed on the death certificate as contributing to or causing the employee's death, the CE concludes that it is "at least as likely as not" that the presence of CBD, or the chronic respiratory disorder consistent with CBD, aggravated or contributed to the "Other Chronic Pulmonary Disease," and therefore to the employee's death.

Exhibit 1 serves as medical evidence that the CE uses in this determination. The CE places a copy of the Memorandum from the DEEOIC Medical Director in the case file. As a result, it is not necessary for the CE to determine whether the "Other Chronic Pulmonary Disease" was directly due to toxic exposure from covered DOE contractor/subcontractor employment.

The accepted "Other Chronic Pulmonary Diseases" are:

- (1) Asbestosis;
- (2) Silicosis;
- (3) Chronic Obstructive Pulmonary Disease (COPD);

9. Beryllium Sensitivity and CBD, Part E. (Continued)

(4) Emphysema; and

(5) Pulmonary Fibrosis

Once the medical, employment, and causation criteria have been met for a beryllium sensitivity or CBD claim under Part E, the employee is awarded medical monitoring, treatment, and therapy for the condition effective relative to the date of filing. In addition, the employee is eligible for lump sum compensation for impairment and/or wage-loss.

10. Presumption of CBD, Diagnosis of Sarcoidosis, and History of Beryllium Exposure. A diagnosis of sarcoidosis is not medically appropriate if there is a documented history of beryllium exposure. In these situations, the CE considers the diagnosis of sarcoidosis as a diagnosis of CBD. However, the application of this presumption in the adjudication of the claim differs between Parts B and E of the Act.

a. Presumption of CBD, Under Part B. The CE establishes that the employee is a "covered beryllium employee" as defined under 42 U.S.C. §73841(7) and as further discussed in paragraph 4 above. Since a diagnosis of sarcoidosis for a covered beryllium employee is not medically appropriate, in any instance when this situation occurs, CBD is presumed to be the diagnosis. However, Part B of the EEOICPA delineates the specific diagnostic criteria to qualify for compensation, therefore the evidence of record needs to meet one of the statutory criteria for CBD to allow for an acceptance, as discussed in paragraphs 6 and 7 above.

b. Presumption of CBD, Under Part E. The CE establishes that the employee has at least one day of verified DOE contractor/subcontractor employment at a covered site during a covered time period when beryllium dust, particles, or vapor may have been present. Whenever the evidence of record contains medical evidence of a diagnosed sarcoidosis and the potential for occupational exposure to beryllium exists, a diagnosis of CBD is presumed. However, the medical requirements for CBD claims under Part E must be met before the claim may be approved.

11. Consequential Illnesses from CBD or its Treatment.

Individuals diagnosed with CBD have the potential to develop an illness as a consequence of this condition or the treatment thereof, especially when the patient uses steroids, such as Prednisone.

Consequential conditions include, but are not limited to, the following: weight gain; elevated blood pressure; hypertension; elevated cholesterol and abnormal lipids; liver function abnormalities; blood sugar change; diabetes; eye/vision problems such as cataracts, glaucoma, and visual acuity changes; gastrointestinal conditions such as gastric reflux or peptic ulcers; psychiatric or psychological conditions such as depression or anxiety; skin problems such as thrush or other fungal infections; metabolic changes such as folic acid depletion; decreased immune response leading to infections and viruses; sleep apnea and other sleep disorders; deconditioning requiring pulmonary rehabilitation, physical therapy, and/or nutritional counseling; and decreased bone density leading to osteoporosis/osteopenia.

12. Silicosis. Chronic silicosis is a non-malignant disease of the lung caused by prolonged exposure to silica dust. Under Part B, if all covered employment and exposure criteria are met, only chronic silicosis is covered. However under Part E, if all covered employment and exposure criteria are met, chronic silicosis, acute silicosis, accelerated silicosis, and complicated silicosis are covered.

If chronic silicosis, acute silicosis, accelerated silicosis, or complicated silicosis is claimed on the Form EE-1 or EE-2, then the CE develops for that specific silicosis under the appropriate Part(s) of the Act.

a. Silicosis Employment and Exposure Criteria, Part B. 42 U.S.C. §7384r(c) and (d) describes the employment requirements for an employee diagnosed with chronic silicosis. The CE reviews the evidence with the claim to ensure that the employee was:

- (1) A DOE employee or a DOE contractor employee; and
- (2) Present for an aggregate of at least 250 work days during the mining of tunnels at a DOE facility

12. Silicosis. (Continued)

located in Nevada or Alaska for tests or experiments related to an atomic weapon (Part B claims only).

b. Medical Evidence. 42 U.S.C. §7384r(e) describes the medical evidence needed to establish a diagnosis of chronic silicosis. The CE verifies that all the necessary medical evidence is present in accordance with the requirements listed in the statute, as follows:

(1) The initial occupational exposure to silica dust preceded the onset of chronic silicosis by at least 10 years; and

(2) A written medical narrative from a qualified physician that includes a diagnosis of chronic silicosis and the date of initial onset. In addition, one of the following is required:

(a) A chest radiograph, interpreted by a physician certified by the National Institute for Occupational Safety and Health (NIOSH) as a B-reader, classifying the existence of pneumoconiosis of category 1/0 or higher;

(b) Results from a computer assisted tomograph or other imaging technique that are consistent with chronic silicosis; or

(c) Lung biopsy findings consistent with chronic silicosis.

Upon review of the evidence submitted, the CE verifies the presence of the necessary medical and diagnostic evidence to support a diagnosis of chronic silicosis. If deficiencies are noted, the CE requests evidence from the claimant and/or the treating physician.

c. Silicosis Employment and Exposure Criteria, Part E. Silica exposure in the performance of duty is assumed if, and only if, the employee was present at a DOE or RECA section 5 facility where silica is known to have been present. The initial occupational exposure to silica dust needs to precede the onset of silicosis by at least 10

12. Silicosis. (Continued)

years. However, there are instances where an employee's initial occupational exposure to silica dust can be great enough to result in the onset of silicosis prior to 10 years. Therefore the CE reviews the employment evidence and weighs the exposure evidence, accordingly, when making causation determinations.

The provisions regarding separate treatment for chronic silicosis set forth in §7384r of the Act for Part B do not apply to Part E. Therefore, for purposes of evaluating the employee's Part E claim for silicosis, the element of causation is not presumed unless it was determined that the employee was entitled to compensation under Part B for silicosis (see §7385s-4(a)) or the Secretary of Energy has made a positive determination of causation (see §7385s-4(b)). In all other cases of claimed silicosis under Part E, the employment and exposure criteria applicable to all other claimed illnesses under Part E shall also apply to silicosis claims; that is, the employee must have been a DOE contractor employee and it must be at least as likely as not that exposure to a toxic substance at a DOE facility was a significant factor in aggravating, contributing to, or causing the employee's silicosis and it must be at least as likely as not that the exposure to such toxic substance was related to employment at a DOE facility.

Silicosis is a nonmalignant respiratory disease covered under RECA section 5. Therefore, for purposes of evaluating the Part E silicosis claim of a uranium employee covered under section 5 of RECA, the Department of Justice (DOJ) verifies covered employment and the CE makes the causation determination under §7385s-4(c) as to whether the employee contracted silicosis through exposure to a toxic substance at a section 5 mine or mill.

(1) Exceptions - Acute, Accelerated, and Complicated Silicosis. The extreme nature, function, or duration of exposure can trigger various forms of silicosis. The CE determines whether or not the employee's occupation entailed such exposure that the disease manifested into an acute, accelerated, or complicated form due to such exposure. These forms of silicosis are not covered under Part B, but are covered under

12. Silicosis. (Continued)

Part E based upon the CE's review of the totality of the evidence.

(2) Employment and Exposure Evidence. The CE obtains evidence of employment and exposure from various sources. The Department of Justice (DOJ) verifies employment for RECA section 5 claimants. The CE obtains other evidence from Document Acquisition Request (DAR) records, DOE Former Worker Program (FWP) records, Site Exposure Matrices (SEM), employment records, Occupational History Questionnaire (OHQ) findings, affidavits, and from the claimant.

d. Medical Evidence, Part E. A physician's written diagnosis and date of initial onset is required to establish silicosis.

When there is insufficient evidence of exposure, diagnostic testing, and/or diagnosis, the CE requests additional information from the claimant and affords the claimant sufficient time to respond.

Where no diagnosis exists, but the required employment element is met and evidence of a lung disease is presented, the CE requests additional medical evidence to establish the diagnosis of silicosis from either the claimant and/or the treating physician, or makes a referral to a DMC if the requested evidence is not submitted. The CE evaluates the DMC opinion and the evidence of file to make a factual determination as to the diagnosis and/or causation.

13. Pneumoconiosis, Part E. Pneumoconiosis is the deposition of particulate matter, such as coal dust, asbestos, and silicon in the lungs. Pneumoconiosis is a Part E covered illness only.

a. Sufficient Evidence to Establish as a Covered Illness. Such evidence includes sufficient exposure to a toxic substance(s) at a covered DOE or RECA section 5 facility, in order to establish that the exposure was a significant factor in aggravating, contributing to, or causing the pneumoconiosis. In particular, it needs to include:

13. Pneumoconiosis, Part E. (Continued)

(1) A sufficient period of latency between initial exposure to a toxin(s) and the onset of the disease; and

(2) Written evidence of one of the following two criteria:

(a) A written diagnosis of pneumoconiosis made by a physician; or

(b) Results from a breathing test (e.g., a Pulmonary Function Test (PFT) or spirometry) showing a restrictive lung pattern of an FVC less than 80% predicted; and

(c) Any one of the following three criteria:

(i) A chest radiograph, interpreted by a NIOSH certified B reader classifying the existence of pneumoconiosis of category 1/0 or higher;

(ii) Results from a chest X-ray or computer assisted tomography (CT) or other imaging technique that are consistent with asbestosis and/or findings of pleural plaques or rounded atelectasis; or

(iii) Lung biopsy findings consistent with pneumoconiosis.

b. Physician Review. Review by a physician is required, if the following evidence is insufficient:

(1) Insufficient evidence of exposure to a toxic substance(s) at a covered DOE or RECA Section 5 facility in order to establish that the exposure was a significant factor in aggravating, contributing to, or causing the pneumoconiosis;

(2) An insufficient period of latency between initial exposure to a toxin(s) and the onset of the disease;

13. Pneumoconiosis, Part E. (Continued)

(3) Some, but not all, of the medical evidence criteria to establish pneumoconiosis are met;

(4) The medical record (e.g., any physician's report, results from imaging studies, surgical, or pathology reports) without a definitive diagnosis of silicosis, possible asbestosis, restrictive lung disease, or pneumoconiosis;

(5) Death certificate with no mention of silicosis, possible asbestosis, restrictive lung disease, or pneumoconiosis;

(6) A chest radiograph interpreted by a NIOSH certified B reader classifying the existence of pneumoconiosis of category 0/1 (i.e., the X-ray is normal and there is no presence of pneumoconiosis); or

(7) Results from a chest X-ray or computer assisted tomography (CT) or other imaging technique that are not suggestive of pneumoconiosis.

14. Asbestosis, Part E. Asbestosis, a form of pneumoconiosis, is a chronic, progressive pulmonary disease caused by the inhalation and accumulation of asbestos particles or fibers in the lungs. Asbestosis is a Part E covered illness only.

a. Medical and Diagnostic Requirements. Asbestosis is characterized by extensive pulmonary interstitial fibrosis (e.g., scarring) and pleural thickening. Progressive thickening and scar formation of the lung tissues occur along with associated loss of respiratory function. These developments are noticeable in the lower part of the lungs, because this area of the lungs receives a greater part of the inhaled load of particulate matter.

Various types of medical evidence can establish an asbestosis diagnosis. Not all types of medical evidence need to be present, and the CE weighs the evidence as a whole to make a determination. Each form of medical evidence described below is given greater weight if the test results include an evaluation by a physician that suggests asbestosis.

14. Asbestosis, Part E. (Continued)

(1) Chest X-ray reports that show pulmonary interstitial fibrosis and cardiac enlargement are regarded as characteristic of asbestosis. The CE takes into account such findings as possibly indicative of asbestosis, based upon the totality of the evidence. However, cardiac enlargement is not always seen with asbestosis. Therefore if cardiac enlargement is not noted in the chest X-ray report, the CE still considers the possibility of asbestosis, based upon the totality of the evidence.

(2) Computerized axial tomography (CAT) and magnetic resonance imaging (MRI) that show characteristic lung scarring, pleural thickening, and cardiac enlargement are also possible indications of asbestosis.

(3) A Pulmonary Function Test (PFT) reveals pulmonary function and capacity. Asbestosis typically restricts pulmonary function; therefore, total lung capacity, vital capacity, compliance measurements, and pulmonary diffusing capacity are reduced if asbestosis is present. It is necessary that the CE obtains a physician evaluation of the PFT results.

(4) A lung biopsy is a sampling of lung tissue. Cytological examination of the sputum or bronchial lavage often shows the presence of asbestos bodies. This test is not considered as definitive for the diagnosis of asbestosis because it is commonly positive in cases of asbestos exposure alone and is seen in other populations such as hematite (i.e., iron ore) miners.

(5) A report by a physician diagnosing asbestosis and providing a diagnosis date.

(6) Screening by DOE through the FWP that is found to be positive. Such a finding is sufficient to establish the diagnosis of asbestosis.

(7) A Referral to a DMC is required in instances of claimed and/or verified high levels of occupational exposure to asbestos in order to determine whether or

14. Asbestosis, Part E. (Continued)

not the normal required latency period for onset is to be waived. When the medical evidence is vague, clarification from the treating physician or a referral to the DMC would be necessary to evaluate the medical evidence and render a medical opinion regarding the existence of asbestosis. As always, the CE gives consideration to the opinion of the treating physician, if one is available.

(8) Asbestosis identified on the death certificate, signed by a physician, as a cause of or contributing factor to death establishes a diagnosis. If the death certificate shows any respiratory illness other than asbestosis, the CE needs to provide a well rationalized conclusion that asbestosis contributed to the death based on the totality of the medical evidence contained in the file.

If the evidence supports a diagnosis of asbestosis and the death certificate lists the cause of death as pneumoconiosis, the CE is to presume that causation to death has been established.

b. Employment/Exposure Requirements. The CE verifies that the employee was a covered DOE employee at a covered DOE or RECA section 5 facility, during a covered time period, and in the course of employment was exposed to asbestos while at the DOE or RECA section 5 facility.

However, if an employee's occupation was such that there is question as to whether or not the labor category and the work processes engaged in exposed the employee to asbestos, or the potential for extreme exposure existed and the employee worked less than 250 aggregate work days, or there is a latency period of less than 10 years existing between the covered DOE or RECA Section 5 employment and the onset of the illness, the CE evaluates the evidence as a whole, considering the amount of occupational exposure, and makes a determination on causation. In instances when the evidence on file is not clear in reference to an employee's occupation, the work processes engaged in, and/or the amount of occupational exposure, a referral to an Industrial Hygienist (IH) is necessary.

14. Asbestosis, Part E. (Continued)

(1) DOE/RECA Section 5 Employment and Asbestos Exposure. With the collection of exposure data contained in SEM, it has been determined that asbestos existed in all covered DOE and RECA section 5 facilities. However, based upon the labor category and the work processes engaged in, coupled with the possibility of the existence of extreme exposure and the number of verified covered work days, the CE determines if sufficient evidence exists to support that the employee was exposed to asbestos.

If sufficient exposure evidence is not available (e.g., DAR records) and the employee's exposure is questionable because of the labor category and the work processes engaged in (e.g., secretary), the CE requests the following information from the claimant:

(a) Medical evidence discussing the employee's work history and exposure to asbestos at the covered facility. The presence of pleural thickening, interstitial fibrosis, neoplasia, or other medical findings characteristic of asbestosis, as discussed above, also helps establish the relationship between employment and exposure;

(b) Personnel or incident records disclosing exposure to asbestos; or

(c) Affidavits from other employees attesting to the employee's asbestos exposure and other evidence such as independent studies of the facility or newspaper articles discussing asbestos exposure at the site.

(2) Latency Period. A sufficient latency period also needs to exist between the covered DOE or RECA section 5 employment and the onset of the illness. Asbestos-related diseases and abnormalities usually do not occur for at least 10 years, but sometimes less, after onset of exposure. Therefore if all diagnostic criteria for asbestosis are satisfied, as discussed in paragraph 14a above, and the evidence of file shows 10

14. Asbestosis, Part E. (Continued)

years or more of asbestos exposure at a DOE or RECA section 5 facility, the CE accepts the claim without a DMC review.

If the latency period is less than 10 years, the CE reviews the evidence of file to determine if sufficient evidence exists to support that the exposure was "at least as likely as not" a significant factor in aggravating, contributing to, or causing asbestosis. In some instances when the medical evidence from the treating physician is not compelling, a referral to a DMC is necessary.

15. Medical Conditions Associated with Asbestos Exposures.

a. Mesothelioma. Mesothelioma is a rare cancer of the pleura that is caused almost exclusively by asbestos exposure. Because of this relationship to asbestos, any claims involving a confirmed diagnosis of mesothelioma are accepted, given the requirements for asbestos exposure at a covered facility (e.g., latency period) have been met.

b. Pleural Plaques and Pleural Effusions. Pleural plaques and pleural effusions are considered conditions caused by asbestos, but do not constitute an asbestosis diagnosis or finding. If a claim is made for asbestosis but only pleural plaques can be accepted, the claim for asbestosis is explicitly denied.

Although generally asymptomatic, the CE accepts pleural plaques and pleural effusions for medical benefits which encompasses the following: chest radiology (e.g., X-rays, CT scans, or MRIs); PFTs; bronchoscopy with or without biopsy; pleural biopsy; and other tests to rule out malignant tumors of the chest.

In addition, it is possible for pleural plaques or pleural effusions to result in an impairment rating and/or wage loss.

(1) Sufficient Evidence to Establish an Asbestos Related Disorder Includes the Following:

15. Medical Conditions Associated with Asbestos Exposures.
(Continued)

(a) Medical evidence as established by the results from a chest X-ray, CT scan, or other imaging technique that are consistent with pleural plaques or pleural effusions, as evidenced by any of the following findings:

(i) Pleural plaques;

(ii) Pleural thickening, not associated with an area of prior surgery or trauma;

(iii) Rounded atelectasis; or

(iv) Bilateral pleural effusions, also known as benign asbestos-related pleural effusion; and

(b) The employee was exposed to asbestos at a covered DOE or RECA Section 5 facility for a DOE contractor or subcontractor for an aggregate of at least 250 work days; and

(c) The latency period between the initial exposure to asbestos and the onset of pleural plaques or pleural effusions is more than 20 years for pleural plaques and between 5 and 30 years for pleural effusions.

(2) When a DMC's Review Is Required Due to Insufficient Evidence:

(a) If the totality of the medical evidence is inconclusive or insufficient to establish a diagnosis of pleural plaques or pleural effusions. Also, if the results from a chest X-ray, computer assisted tomography (CT), or other imaging technique are consistent with any of the following findings:

(i) Pleural thickening in an area of prior surgery or trauma; or

15. Medical Conditions Associated with Asbestos Exposures.
(Continued)

(ii) Pleural effusion, only if the record does not indicate that there is another disease process that would otherwise account for the effusion, such as congestive heart failure (CHF), cancer, or other lung disease;

(b) If the employee was a DOE contractor or subcontractor employee who was exposed to asbestos for less than an aggregate of 250 work days at a DOE or RECA section 5 facility. If the exposure period is less than the required aggregate 250 days, but the employee worked in an occupation that typically experiences heavy asbestos exposure, the CE includes that information in the referral to a physician; or

(c) If the latency period between the initial exposure to asbestos and the onset of pleural plaques or pleural effusions is less than 20 years for pleural plaques, or less than 5 years or more than 30 years for pleural effusions.

c. Lung Fibrosis (Pulmonary Fibrosis).

(1) Sufficient Evidence to Establish as a Covered Illness Includes the Following:

(a) Sufficient exposure to a toxic substance(s) at a covered DOE or RECA section 5 facility for a DOE contractor or subcontractor to establish that the exposure was a significant factor in aggravating, contributing to, or causing the lung fibrosis;

(b) A period of latency between the initial exposure to the toxin(s) and the initial onset of the lung fibrosis; and

(c) A written diagnosis of lung fibrosis made by a physician along with any one of the following three criteria:

15. Medical Conditions Associated with Asbestos Exposures.
(Continued)

(i) Results from a chest X-ray, CT scan, or other imaging technique that are consistent with fibrosis such as small lung fields or volumes, minimal ground glass opacities, and/or bibasilar reticular abnormalities;

(ii) Results of breathing tests (e.g., PFTs or spirometry) showing a restrictive or mixed pattern, such as FVC less than 80% predicted; or

(iii) Lung biopsy findings consistent with fibrosis; and

(d) The medical evidence does not contain any indication that the lung fibrosis is present due to another disease process.

16. Chronic Obstructive Pulmonary Disease (COPD). COPD is a disease that causes airflow blockage and breathing-related problems.

a. Evaluating Medical Evidence. Any one of the following tests below can provide an indication of COPD, but a diagnosis is not based solely on one of the following criteria. The CE weighs all the medical evidence before making a finding. Exposure to certain toxic substances that induce lung ailments are considered when the CE is reviewing the evidence.

All test results are to be accompanied by a physician's interpretation in order to have probative value. If a physician's interpretation is not available, the CE seeks such interpretation from either the treating physician or a DMC. The CE is not qualified to make medical opinions as to the results of the tests described below.

(1) Arterial Blood Gas (ABG) Test. Abnormal results from the blood gas components include such findings as the body is not getting enough oxygen, is not getting rid of enough carbon dioxide, or that there is a problem with kidney function.

16. Chronic Obstructive Pulmonary Disease (COPD). (Continued)

(2) Consistent Chest X-rays/CAT scans. Chest X-ray results vary and show interstitial patterns, scarring, and other abnormalities.

(3) Abnormal Spirometry. The Spirometer measures air flow and air volume. An abnormal reading includes an indication of COPD or some other lung condition.

(4) Bronchoscopy. A bronchoscopy is used by physicians to examine the major air passages of the lungs. A finding of an obstruction in the air passages includes an indication of COPD or some other lung condition.

(5) DMC Referral. If the totality of the medical evidence is insufficient to establish a lung condition, the CE refers the case file to a DMC for an opinion.

b. Employment and Exposure Requirements. The CE develops for covered DOE or RECA section 5 employment at a covered DOE or RECA section 5 facility during a covered timeframe, or for eligibility as a qualified RECA 4 claimant. Site profiles, SEM, and evidentiary employment evidence (e.g., DAR records, OHQ findings, affidavits, etc.) are used to determine what toxins were present at the site.

Based upon the totality of the evidence, the CE determines whether it is "at least as likely as not" that the established occupational exposure was a significant factor in aggravating, contributing to, or causing the condition.

c. Unique Conditions within COPD. Emphysema is caused by only a small subset of the toxic substances associated with chronic bronchitis, but is sometimes aggravated by toxins associated with COPD.

If all of the COPD criteria are otherwise met, individuals with Alpha-1 Antitrypsin Deficiency (AAT Deficiency) are considered to have a covered illness.

17. Other Conditions. Like asbestosis and the lung ailment COPD, there are a host of other non-cancerous conditions potentially covered under Part E that are not covered under Part B.

a. Exposure. The CE uses site profiles, SEM, DAR records, and other employment exposure data in evaluating causation. The SEM acts as a repository of information related to toxic substances potentially present at covered DOE and RECA sites, and is particularly helpful as an exposure development tool. The SEM is a living database which is updated with toxic substances and facilities as they are evaluated. The SEM assists the CE in verifying the presence of a toxic substance at a given building or during a given work process.

In some instances, with or without sufficient exposure data, it is necessary to refer the case file to a DMC, IH, or toxicologist to evaluate the evidence and render an expert opinion as to causation and exposure.

b. Medical Requirements. With the wide variety of conditions claimed under Part E, this chapter cannot address diagnostic requirements of all possible conditions.

However, the matrices in Exhibit 2 have been created which provides descriptions of medical evidence sufficient to establish some conditions as covered illnesses and they include the following: kidney disease; occupational asthma; heart attack; toxic neuropathy; and chronic toxic encephalopathy. Ultimately, the CE uses his or her best judgment in reviewing and evaluating the probative value of the medical evidence.

Referrals to DMCs, IHs, or toxicologists are necessary for some conditions, based upon the evidence of record in a case-by-case basis. A physician's narrative or DMC report that is well rationalized and provides a diagnosis holds the greatest weight.


c. Causation. For Part E claims, the evidence must establish that there is a relationship between exposure to a toxin and an employee's illness or death. This relationship defines the intensity, duration, and route of exposure, which is characteristic of that specific toxin

17. Other Conditions. (Continued)

and illness or death. The evidence further needs to demonstrate whether it is "at least as likely as not" that such exposure at a covered DOE or RECA section 5 facility during a covered time period was a significant factor in aggravating, contributing to, or causing the employee's illness or death, and that it is "at least as likely as not" that exposure to a toxic substance(s) was related to employment at a covered DOE or RECA section 5 facility.

Memorandum from DEEOIC Medical Director
Regarding Causal Relationship Between
Established CBD and Other Respiratory Disorders

Memorandum

Date: 08/25/2005
To: Peter Turcic, Director of DEEOIC, Department of Labor
From: Sylvie I. Cohen, MD, MPH 
RE: Chronic Pulmonary Diseases

This memo is to address the rationale between the accepted medical condition under part B of the program for Chronic Beryllium Disease (CBD) and its contribution and aggravation of other chronic pulmonary diseases.

CBD is considered to be a disease that is involved with the destruction of viable pulmonary tissue that normally aides an individual in the process of gas exchange and blood oxygenation.

There are other chronic pulmonary diseases that are involved with lung tissue destruction or replacement that for the purpose of this memo we shall call "Other Chronic Pulmonary Diseases." Diseases that should be considered as members of this set are: asbestosis, silicosis, Chronic Obstructive Pulmonary Disease (COPD), emphysema, and pulmonary fibrosis.

Since both CBD and Other Chronic Pulmonary Diseases share in the destruction and or replacement of viable lung tissue, it can be concluded that the presence of CBD contributed or aggravated one of the illnesses named in the list of Other Chronic Pulmonary Diseases which led to an individual's death.

Matrix for Confirming Sufficient Evidence of Non-Cancerous
Covered Illnesses

SILICOSIS, CHRONIC

Criteria	Sufficient evidence of covered illness	Sufficient evidence of possible covered illness, requires physician review
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates	DOE Facilities Specific job titles/ processes Applicable dates And Additional information is needed**
Latency*	10 years or more	5-10 years
Medical Evidence for illness and diagnostic testing criteria	1. A written diagnosis of silicosis made by a medical doctor And 2. Any <u>one</u> of the following three criteria a. A chest radiograph, interpreted by NIOSH certified B reader classifying the existence of pneumoconioses of category 1/0 or higher; <u>or</u> b. Results from a chest x-ray or computer assisted tomography (CT) or other imaging technique that are consistent with silicosis • Such as nodules, or fibrosis usually with upper lung zone predominance c. Lung biopsy findings consistent with silicosis • Such as silicotic nodules	Some, but not all criteria to establish the illness are met** Or Medical record (includes any provider report, results of imaging studies, surgical or pathology reports, or other acceptable record) mention of silicosis, possible silicosis, restrictive lung disease, fibrosis, or pneumoconiosis Or Death certificate mention of silicosis, possible silicosis, restrictive lung disease, fibrosis or pneumoconiosis Or A chest radiograph, interpreted by NIOSH certified B reader classifying the existence of pneumoconioses of category 0/1 Or Lung biopsy findings suggestive of silicosis
Additional considerations for causation	None needed	None needed

* The actual latency period for disease development is a function of the duration and intensity of exposure.

** Triggers DOL request for additional information from the worker for exposure and/or diagnostic testing criteria elements. A request for additional information should also be made if there is insufficient information present to establish a possible exposure or illness.

*** References utilized include American Thoracic Society consensus statement.

SILICOSIS, ACUTE

Criteria	Sufficient evidence to <u>establish a covered illness</u>	Sufficient evidence to <u>establish a possible illness requiring physician review.</u>
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates	DOE Facilities Specific job titles/ processes Applicable dates And Additional information is needed**
Latency*	Weeks to months	Weeks to months
Medical Evidence for illness and diagnostic testing criteria	<p>1. Any <u>one</u> of the following two criteria; and</p> <p>a. A written diagnosis of acute silicosis made by a medical doctor; <u>or</u></p> <p>b. Death certificate or other acceptable documentation of death due to acute silicosis</p> <p>And</p> <p>2. The medical record contains no other diagnoses, such that would otherwise account for the acute sudden severe lung illness, such as other infection or ARDS</p>	<p>Some, but not all criteria to establish the illness are met**</p> <p>Or</p> <p>Written evidence of sudden lung illness causing death or severe, overwhelming lung illness, even if attributed to tuberculosis or other illness or infection</p> <p>Or</p> <p>Results from a chest x-ray or computer assisted tomography (CT) or other imaging technique that are suggestive of acute silicosis</p> <ul style="list-style-type: none"> • Such as: air space obliteration, alveolar filling pattern, pulmonary edema, pulmonary hemorrhage, infiltrate, alveolar proteinosis <p>Or</p> <p>Results of lung function testing (PFT or spirometry) showing sudden worsening</p> <p>Or</p> <p>Lung biopsy findings suggestive of acute silicosis</p> <ul style="list-style-type: none"> • Such as alveoli filled with proteinaceous material
Additional considerations for causation	None needed	None needed

* The actual latency period for the development is a function of the exposure's duration and intensity of exposure.

** Triggers DOL request for additional information from the worker for exposure and/or diagnostic testing criteria elements. A request for additional information should also be made if there is insufficient information present to establish a possible exposure or illness.

***References utilized include American Thoracic Society consensus statement.

SILICOSIS, ACCELERATED

Criteria	Sufficient evidence to establish a covered illness	Sufficient evidence to establish a possible illness requiring physician review
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates	DOE Facilities Specific job titles/ processes Applicable dates And Additional information is needed**
Latency*	2-5 years***	< 2years or > 5 years
Medical Evidence for illness and diagnostic testing criteria	1. A written diagnosis of accelerated silicosis made by a medical doctor And 2. Any <u>one</u> of the following three criteria a. A chest radiograph, interpreted by NIOSH certified B reader classifying the existence of pneumoconioses of category 1/0 or higher; <u>or</u> b. Results from a chest x-ray or computer assisted tomography (CT) or other imaging technique that are consistent with silicosis • Such as nodules or fibrosis usually with upper lung zone predominance c. Lung biopsy findings consistent with silicosis • Such as silicotic nodules	Some, but not all criteria to establish the illness are met** Or Medical record (includes any provider report, results of imaging studies, surgical or pathology reports, or other acceptable record) mention of accelerated silicosis, silicosis, possible silicosis, restrictive lung disease, fibrosis, or pneumoconiosis <u>Or</u> Death certificate mention of silicosis, possible silicosis, restrictive lung disease, fibrosis or pneumoconiosis Or A chest radiograph, interpreted by NIOSH certified B reader classifying the existence of pneumoconioses of category 0/1 Or Lung biopsy findings suggestive of silicosis
Additional considerations for causation	None needed	None needed

* The actual latency period for the development of this disease is a function of the duration and intensity of exposure.

** Triggers DOL request for additional information from the worker for exposure and/or diagnostic testing criteria elements. A request for additional information should also be made if there is insufficient information present to establish a possible exposure or illness.

*** References utilized include American Thoracic Society consensus statement.

SILICOSIS, COMPLICATED

Criteria	Sufficient evidence to establish a covered illness	Sufficient evidence to establish a possible illness requiring physician review.
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates	DOE Facilities Specific job titles/ processes Applicable dates And Additional information is needed**
Latency*	Years to decades	Years to decades
Medical Evidence for illness and diagnostic testing criteria	1. A written diagnosis of progressive massive fibrosis (PMF) or complicated silicosis made by a medical doctor And 2. Results from a chest x-ray or computer assisted tomography (CT) or other imaging technique that are consistent with PMF <ul style="list-style-type: none"> • Progression and coalescence of the upper lung zone nodules to form masses (conglomerate lesions) • When they cause contraction of the lobes, an "angel wing pattern" can be seen 	Some, but not all criteria to establish the illness are met**
Additional considerations for causation	None needed	None needed

* The actual latency period for the development of this disease is a function of the duration and intensity of exposure.
 ** Triggers DOL request for additional information from the worker for exposure and/or diagnostic testing criteria elements. A request for additional information should also be made if there is insufficient information present to establish a possible exposure or illness.

*** References utilized include American Thoracic Society consensus statement.

PNEUMOCONIOSIS

Criteria	Sufficient evidence to <u>establish a covered illness</u>	Sufficient evidence to <u>establish a possible illness requiring physician review.</u>
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates	DOE Facilities Specific job titles/ processes Applicable dates And Additional information is needed**
Latency*	Years	Years
Medical Evidence for illness and diagnostic testing criteria	1. Written evidence of <u>one</u> of the following two criteria a. A written diagnosis of pneumoconiosis made by a medical doctor; <u>or</u> b. Results of breathing tests (PFTs or spirometry) showing a restrictive lung pattern FVC < 80% predicted And 2. Any <u>one</u> of the following three criteria a. A chest radiograph, interpreted by NIOSH certified B reader classifying the existence of pneumoconiosis of category 1/0 or higher; <u>or</u> b. Results from a chest x-ray or computer assisted tomography (CT) or other imaging technique that are consistent with asbestosis and/or findings of pleural plaques or rounded atelectasis; <u>or</u> c. Lung biopsy findings consistent with pneumoconiosis	Some, but not all criteria to establish the illness are met** Or Medical record (includes any provider report, results of imaging studies, surgical or pathology reports, or other acceptable record) of silicosis, possible asbestosis, restrictive lung disease, or pneumoconiosis <u>Or</u> Death certificate mention of silicosis, possible asbestosis, restrictive lung disease, or pneumoconiosis <u>Or</u> A chest radiograph, interpreted by NIOSH certified B reader classifying the existence of pneumoconiosis of category 0/1 <u>Or</u> Results from a chest x-ray or computer assisted tomography (CT) or other imaging technique that are suggestive of pneumoconiosis.
Additional considerations for causation	None needed	None needed

* The actual latency period for the development of this disease is a function of the specific causative toxic substance as well as the duration and intensity of exposure.

** Triggers DOL request for additional information from the worker for exposure and/or diagnostic testing criteria elements. A request for additional information should also be made if there is insufficient information present to establish a possible exposure or illness.

ASBESTOS RELATED DISORDERS

Criteria	Sufficient evidence to <u>establish a covered illness</u>	Sufficient evidence to <u>establish a possible illness requiring physician review</u>
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates	DOE Facilities Specific job titles/ processes Applicable dates And Additional information is needed**
Latency*	Pleural plaques: 20 or more years Pleural effusions: 5-30 years	Pleural plaques: < 20 years Pleural effusions: <5 or > 30 years
Medical Evidence for illness and diagnostic testing criteria	Results from a chest x-ray or computer assisted tomography (CT) or other imaging technique that are consistent with these disorders <ul style="list-style-type: none"> • Pleural plaques • Pleural thickening, not associated with an area of prior surgery or trauma • Rounded atelectasis • Bilateral pleural effusions, also called benign asbestos related pleural effusion 	Results from a chest x-ray or computer assisted tomography (CT) or other imaging technique that are consistent with these disorders <ul style="list-style-type: none"> • Pleural thickening in an area of prior surgery or trauma • Pleural effusion, if the record does not indicate that there is another disease process that would otherwise account for the effusion, such as congestive heart failure (CHF), cancer, or other lung disease
Additional considerations for causation	None needed	None needed

* The actual latency period for the development of this disease is a function of the duration and intensity of exposure.

** Triggers DOL request for additional information from the worker for exposure and/or diagnostic testing criteria elements. A request for additional information should also be made if there is insufficient information present to establish a possible exposure or illness.

*** References utilized include American Thoracic Society consensus statement.

LUNG FIBROSIS

Criteria	Sufficient evidence to <u>establish a covered illness</u>	Sufficient evidence to <u>establish a possible illness requiring physician review.</u>
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates	DOE Facilities Specific job titles/ processes Applicable dates And Additional information is needed**
Latency*	Years	Years
Medical Evidence for illness and diagnostic testing criteria	1. A written diagnosis of lung fibrosis made by a medical doctor And 2. Any one of the following three criteria a. Results from a chest x-ray or computer assisted tomography (CT) or other imaging technique that are consistent with fibrosis <ul style="list-style-type: none"> • Such as small lung fields or volumes, minimal ground glass opacities, and/or bibasilar reticular abnormalities b. Results of breathing tests (PFTs or spirometry) showing a restrictive or mixed pattern <ul style="list-style-type: none"> • Such as FVC <80% predicted c. Lung biopsy findings consistent with fibrosis And 3. There is no evidence in the medical record that the lung fibrosis is present due to another disease process.	Some, but not all criteria to establish the illness are met** Or Medical record (includes any provider report, results of imaging studies, surgical or pathology reports, or other acceptable record) of lung fibrosis Or Death certificate mention of fibrosis Or Results from a chest x-ray or computer assisted tomography (CT) or other imaging technique that are suggestive of fibrosis
Additional considerations for causation	None needed	None needed

* The actual latency period for the development of this disease is a function of the specific causative toxic substance as well as the duration and intensity of exposure.

** Triggers DOL request for additional information from the worker for exposure and/or diagnostic testing criteria elements. A request for additional information should also be made if there is insufficient information present to establish a possible exposure or illness.

CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

Criteria	Sufficient evidence to <u>establish a covered illness</u>	Sufficient evidence to <u>establish a possible illness requiring physician review.</u>
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates	DOE Facilities Specific job titles/ processes Applicable dates And Additional information is needed**
Latency*	Years	Months or years
Medical Evidence for illness and diagnostic testing criteria	1. Any one of the following three criteria a. A written diagnosis of COPD or chronic bronchitis made by a medical doctor <ul style="list-style-type: none"> • Chronic bronchitis is defined as the presence of chronic productive cough for 3 months in each of two successive years and other causes of cough have been excluded b. Results of PFTs or spirometry showing an obstructive or mixed pattern <ul style="list-style-type: none"> • FEV₁/FVC < 70% and FEV₁ < 80% predicted. c. Results from a chest x-ray or other imaging technique that are consistent with COPD <ul style="list-style-type: none"> • Such as air trapping, flattening of diaphragms, enlarged lung fields. And 2. The employee has a history of being a never smoker*** And 3. There is no other lung disease present that would account for the findings	Some, but not all criteria to establish the illness are met** Emphysema is caused by only a small subset of the toxic substances associated with chronic bronchitis, however it may be aggravated by the others on this list.
Additional considerations for causation	There is currently no medical testing or means to distinguish COPD due to any of the above toxic substance exposures and COPD due to other causes. Physician review is required.	Physician review is required. Also, if all criteria are otherwise met, individuals with Alpha-1 Antitrypsin Deficiency (AAT Deficiency) may be considered to have a covered illness.

* The actual latency period for the development of this disease is a function of the specific causative toxic substance as well as the duration and intensity of exposure.

** Triggers DOL request for additional information from the worker for exposure and/or diagnostic testing criteria elements. A request for additional information should also be made if there is insufficient information present to establish a possible exposure or illness.

***ATS criterion for a never smoker, or non-smoker, is < 20 packs of cigarettes in a lifetime, but this piece of information may not be found in most medical records.

MESOTHELIOMA

Criteria	Sufficient evidence to establish a covered illness. If some but not all criteria are met, physician review recommended	Evidence that suggests a covered illness exists and that physician review is recommended
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates	DOE Facilities Specific job titles/ processes Applicable dates And Additional information is needed**
Latency*	30-50 years	20-29 or > 50 years
Medical Evidence for illness and diagnostic testing criteria	1. A written diagnosis of mesothelioma made by a medical doctor And 2. Pathology report consistent with mesothelioma from surgical or biopsy specimen	Some, but not all criteria to establish the illness are met** Or Medical record (includes any provider report, results of imaging studies, surgical or pathology reports, or other acceptable record) or death certificate mention of mesothelioma or pleural malignancy Or Results from a chest x-ray or computer assisted tomography (CT) or other imaging technique that are suggestive of mesothelioma • Such as large, unilateral pleural effusion, pleural mass, pleural rind, or diffuse pleural thickening
Additional considerations for causation	None needed	None needed

* The actual latency period for the development of this disease is a function of the specific causative toxic substance as well as the duration and intensity of exposure.

** Triggers DOL request for additional information from the worker for exposure and/or diagnostic testing criteria elements. A request for additional information should also be made if there is insufficient information present to establish a possible exposure or illness.

*** References utilized include American Thoracic Society consensus statement.

KIDNEY DISEASE

Criteria	Sufficient evidence to establish a covered illness. If some but not all criteria are met, physician review recommended	Evidence that suggests a covered illness exists and that physician review is recommended
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates	DOE Facilities Specific job titles/ processes Applicable dates And Additional information is needed**
Latency*	Months or years	Days, months, or years
Medical Evidence for illness and diagnostic testing criteria	1. Any one of the following two criteria a. A written diagnosis of kidney disease made by a medical doctor <ul style="list-style-type: none"> • Other terms are chronic renal disease, chronic renal failure, renal insufficiency b. The worker required dialysis And 2. The worker does not have high blood pressure or diabetes And 3. The type of kidney disease diagnosed is consistent with one known to be caused by the identified toxic substance.	Some, but not all criteria to establish the illness are met**
Additional considerations for causation	Additional testing may be required to help establish a causal link between a toxic substance and a specific kidney disease. This may include additional urine testing, such as β 2-microglobulin or retinol binding protein and/or biological tests to detect residual evidence of the toxic substance in the body. The need for this additional testing should be determined by the reviewing physician. Physician review is required.	Physician review is required.

* The actual latency period for the development of this disease is a function of the specific causative toxic substance as well as the duration and intensity of exposure.

** Triggers DOL request for additional information from the worker for exposure and/or diagnostic testing criteria elements. A request for additional information should also be made if there is insufficient information present to establish a possible exposure or illness.

ASTHMA, OCCUPATIONAL

Criteria	Sufficient evidence to establish a covered illness	Sufficient evidence to establish a possible illness requiring physician review.
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates	DOE Facilities Specific job titles/ processes Applicable dates And Additional information is needed**
Latency*	Weeks, months, or years	Weeks, months, or years
Medical Evidence for illness and diagnostic testing criteria	<p>1. The following three criteria:</p> <p>i. Onset of asthma occurring after first DOE exposure (except resolved asthma childhood)</p> <p>And</p> <p>ii. A written diagnosis of occupational asthma or asthma caused by toxic substance made by a medical doctor</p> <p>And</p> <p>iii. The diagnosis of asthma was made based on any one of the following criteria</p> <p>a. Methacholine challenge test results showing a PC₂₀ ≤ 8 mg/ml; or</p> <p>b. Post-bronchocodialator reversibility of FEV₁ ≥ 12% and 200 ml; or</p> <p>c. Post-bronchocodialator reversibility of FEV₁ ≥ 12% , but <20 ml, with subsequent improvement in FEV₁ ≥ 20% after steroid trial</p> <p>And</p>	<p>Some, but not all criteria to establish the illness are met**</p> <p>Occupational asthma via sensitization to a new agent in the workplace can occur in workers with pre-existing asthma.</p> <p>Additional testing that can be consistent with the diagnosis, but does not establish the diagnosis.</p> <p>1. Positive skin prick testing or serologic IgE (RAST) testing to the toxic substance</p>
Additional considerations for causation	<p>1. An association between symptoms of asthma and work, including wheeze and/or shortness of breath that are better on days away from work, especially on holiday or vacation.</p> <p>And</p> <p>2. One or more of the following criteria:</p> <p>a. work-related change in FEV₁ or PEF rate; or</p> <p>b. work-related change in bronchial hyperresponsiveness; or</p> <p>c. positive response to specific inhalation challenge test (note this is not recommended if not already performed)</p>	None needed

* The actual latency period for the development of this disease is a function of the specific causative toxic substance as well as the duration and intensity of exposure.

** Triggers request for additional information from the worker for exposure and/or diagnostic testing criteria. This request should also be made if there is insufficient information to establish exposure or illness.

ASTHMA, IRRITANT INDUCED

Criteria	Sufficient evidence to <u>establish a covered illness</u>	Sufficient evidence to <u>establish a possible illness requiring physician review.</u>
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates	DOE Facilities Specific job titles/ processes Applicable dates And Additional information is needed**
Latency*	Days, months, or years	Days, months, or years
Medical Evidence for illness and diagnostic testing criteria	1. The three following criteria: a. Onset of asthma occurring after first DOE exposure (except resolved asthma childhood) And b. A written diagnosis of occupational asthma, irritant induced asthma, or asthma caused by toxic substance made by a medical doctor And	Some, but not all criteria to establish the illness are met**
Additional considerations for causation	1. An association between symptoms of asthma and work, including wheeze and/or shortness of breath are better on days away from work, especially on holiday or vacation. And 2. One or more of the following criteria: a. work-related change in FEV ₁ or PEF rate; or b. positive response to specific inhalation challenge test (note this is not recommended if not already performed); or c. Onset of asthma in clear association with a symptomatic exposure to an irritant agent in the workplace. This includes RADS, occurring after a single exposure to a substance with irritant properties present in a very high concentration, if other disease processes have been ruled out.	None needed

* The actual latency period for the development of this disease is a function of the specific causative toxic substance as well as the duration and intensity of exposure.

** Triggers DOL request for additional information from the worker for exposure and/or diagnostic testing criteria elements. A request for additional information should also be made if there is insufficient information present to establish a possible exposure or illness.

ASTHMA, IRRITANT AGGRAVATED

Criteria	Sufficient evidence to <u>establish a covered illness</u>	Sufficient evidence to <u>establish a possible illness requiring physician review.</u>
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates	DOE Facilities Specific job titles/ processes Applicable dates And Additional information is needed**
Latency*	Days or months	Days or months
Medical Evidence for illness and diagnostic testing criteria	1. History of asthma as an adult prior to DOE exposure And	Some, but not all criteria to establish the illness are met**
Additional considerations for causation	1. The two following criteria a. An association between symptoms of asthma and work, including wheeze and/or shortness of breath are better on days away from work, especially on holiday or vacation. And 2. The worker was symptomatic or required medication before and had increase in symptoms or medication requirement after beginning to work with the above substance.	None needed

* The actual latency period for the development of this disease is a function of the specific causative toxic substance as well as the duration and intensity of exposure.

** Triggers DOL request for additional information from the worker for exposure and/or diagnostic testing criteria elements. A request for additional information should also be made if there is insufficient information present to establish a possible exposure or illness.

HEART ATTACK

Criteria	Sufficient evidence to establish a covered illness	Sufficient evidence to establish a possible illness requiring physician review.
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates	DOE Facilities Specific job titles/ processes Applicable dates And Additional information is needed**
Latency*	Weeks, months, or years	Weeks, months, or years
Medical Evidence for illness and diagnostic testing criteria	1. A written diagnosis of heart attack or sudden death due to heart disease by a medical doctor And 2. The heart attack or sudden death occurred after being away from nitrate exposure for a couple of days following a number of days of regular nitrate exposure (classically on a Monday morning).	Some, but not all criteria to establish the illness are met** This is strongly supported by a history of recurrent headaches following a similar pattern
Additional considerations for causation	Due to high prevalence of heart disease and heart attacks, physician review is recommended for determination of causation.	Physician review recommended

* The actual latency period for the development of this disease is a function of the specific causative toxic substance as well as the duration and intensity of exposure.

** Triggers DOL request for additional information from the worker for exposure and/or diagnostic testing criteria elements. A request for additional information should also be made if there is insufficient information present to establish a possible exposure or illness.

For nitrates only.

NEUROPATHY, TOXIC

Criteria	Sufficient evidence to establish a covered illness	Sufficient evidence to establish a possible illness requiring physician review.
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates	DOE Facilities Specific job titles/ processes Applicable dates And Additional information is needed**
Latency*	Days, months, or years	Days, months, or years
Medical Evidence for illness and diagnostic testing criteria	<p>1. A written diagnosis of peripheral neuropathy, toxic neuropathy, or neuropathy due to a toxic substance.</p> <p>And</p> <p>2. The physician's diagnosis was made by all three of the following criteria. Note: the definition of the classic syndrome will vary among the different toxic substances.</p> <p>a. Symptoms consistent with the classic syndrome caused by the specific toxic substance</p> <ul style="list-style-type: none"> • Sensory; or • Motor; or • Sensorimotor <p>b. Signs consistent with the classic syndrome caused by the specific toxic substance</p> <ul style="list-style-type: none"> • Decreased or abnormal distal sensation <ul style="list-style-type: none"> a. Such as stocking-glove numbness, allodynia, and/or hyperalgesia • Decreased or absent distal reflexes • Distal muscle weakness and/or atrophy <p>c. Results of electrodiagnostic studies consistent with a neuropathy caused by the specific toxic substance.</p> <ul style="list-style-type: none"> • Should include both needle EMG and nerve conduction studies (NCS) 	Some, but not all criteria to establish the illness are met**
Additional considerations for causation	Electrodiagnostic testing can distinguish some but not all toxic neuropathies from those due to other causes. There are many medical causes of peripheral neuropathy, especially sensorimotor neuropathies. Physician review required.	Physician review is required.

* The actual latency period for the development of this disease is a function of the specific causative toxic substance as well as the duration and intensity of exposure.

** Triggers request for additional information from the worker for exposure and/or diagnostic testing criteria. This request should also be made if there is insufficient information establish a possible exposure or illness.

ENCEPHALOPATHY, CHRONIC TOXIC

Criteria	Sufficient evidence to establish a covered illness	Sufficient evidence to establish a possible illness requiring physician review.
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates	DOE Facilities Specific job titles/ processes Applicable dates And Additional information is needed**
Latency*	Years	Days, months, or years
Medical Evidence for illness and diagnostic testing criteria	1. A written diagnosis of chronic toxic encephalopathy (ICD9 code 349.82 or analogous conditions) made by a medical doctor And 2. A formal neuropsychological assessment that included a battery of neurobehavioral tests is consistent with the diagnosis. 3. Appropriate neuroimaging studies (e.g. brain MRI, head CT) have been performed to investigate findings consistent with the diagnosis, or suggestive of unrelated causes.	
Additional considerations for causation	Some patterns on the history and neurobehavioral test profile may be more consistent with chronic toxic encephalopathy than with unrelated causes (e.g. greater decrements in performance vs. verbal IQ). Physician review is required.	Physician review is required.

* The actual latency period for the development of this disease is a function of the specific causative toxic substance as well as the duration and intensity of exposure.

** Triggers DOL request for additional information from the worker for exposure and/or diagnostic testing criteria elements. A request for additional information should also be made if there is insufficient information present to establish a possible exposure or illness.