U.S. Department of Labor

Office of Workers' Compensation Programs
Division of Energy Employees Occupational
Illness Compensation
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RELEASE - TRANSMISSION OF REVISED MATERIAL TO BE INCORPORATED INTO THE FEDERAL (EEOICPA) PROCEDURE MANUAL: CHAPTER 2-1000, ELIGIBILITY CRITERIA FOR NON-CANCEROUS CONDITIONS.

EEOICPA TRANSMITTAL NO. 15-08 September 2015

EXPLANATION OF MATERIAL TRANSMITTED:

This material is issued as procedural guidance to update, revise and replace the text of EEOICPA Procedure Manual (PM) Chapter 2-1000, Eligibility Criteria for Non-Cancerous Conditions. This version incorporates changes that have arisen since the last publication of Chapter 2-1000, Eligibility Criteria for Non-Cancerous Conditions to include:

- Provides updated guidance regarding the criteria for claims for Beryllium Sensitivity when Chronic Beryllium Disease (CBD) is claimed.

- Provides updated guidance regarding the criteria for consequential illnesses from CBD or its treatment.

- Provides updated guidance regarding the criteria for Pneumoconiosis claims, Part E.

- Provides updated guidance regarding the criteria for Asbestosis claims.

- Provides updated guidance regarding the criteria for Medical Conditions Associated with Asbestos Exposures -

    - o Pleural Plaques and Pleural Effusions
    - o Lung Fibrosis (Pulmonary Fibrosis)

- Idiopathic Pulmonary Fibrosis
- Synonymous Fibrotic Lung Conditions

- Provides updated guidance regarding the criteria for Chronic Obstructive Pulmonary Disease (COPD).

- Provides new guidance regarding the criteria for Parkinsonism.

- Provides a new and updated Exhibit 1: Matrix for Confirming Sufficient Evidence of Non-Cancerous Covered Illnesses.

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Filing Instructions:

Remove	Insert
PM Ch. 2-1000	PM Ch. 2-1000

File this Transmittal behind Part 2 in the front of the Unified Federal (EEOICPA) Procedure Manual.

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1 Matrix for Confirming Sufficient Evidence of Non-Cancerous Covered Illnesses. 09/15 15-08

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 Energy Employees Occupational Illness Compensation Program Act (EEOICPA). The chapter provides a discussion of the steps the Claims Examiner (CE) undertakes in the development of the causal relationship between toxic substance exposure at a covered facility and diagnosed non-cancerous conditions.

2. Approved Part B Illnesses. The EEOICPA provides that a CE may presume an occupational illness approved under Part B relates to a toxic substance exposure under Part E, as long as the employee is a DOE contractor or subcontractor working at a covered DOE or RECA Section 5 facility under Part E. In all instances when issuing a Part E Recommended Decision based on a Part B acceptance, the CE applies the factual findings of the original Part B Final Decision. This includes the establishment of verified covered employment, diagnosed medical condition(s), and survivor (if applicable) relationship to the deceased employee. Survivors approved under Part B need to establish the distinct survivorship criteria under Part E and provide evidence that it is "at least as likely as not" that the employee's exposure to a toxic substance was a significant factor that aggravated, contributed to, or caused his or her death.

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.

Those conditions covered under Part B are beryllium sensitivity, chronic beryllium disease, chronic silicosis, and cancer. Under Part E, consideration extends to any illness claimed as related to an occupational toxic substance exposure, 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. An illness or injury that arises because of an accepted Part B or Part E condition is compensable as a consequential condition.

To identify accurately a claimed condition as covered under Part B, Part E, or both, the CE has to evaluate initially the claimed employment, because that is indicative of the type of coverage that extends to the employee. Some types of qualifying employment under Part B do not qualify for coverage under Part E. For example, Part B coverage extends to atomic weapons employees, beryllium vendor employees, and DOE contractor/subcontractors and federal employees. Alternatively, Part E coverage extends to DOE subcontractor/contractor employees working at DOE facilities. Part E does not cover employees of atomic weapons employers, beryllium vendors, or federal agencies, except if the employee worked at an atomic weapons employer facility or with a beryllium vendor designated as a DOE facility for remediation and the employee worked for the remediation contractor. The CE has to assess properly each claimed medical condition, along with the type of employment claimed, to associate it to the respective Part B or E component.

4. Proof of Covered Employment for Beryllium Illness. For beryllium claims, exposure to beryllium is necessary. The DEEOIC recognizes that the potential for beryllium exposure existed at all beryllium vendor and DOE facilities.

a. Under Part B. To satisfy the employment requirement, the evidence needs to establish either (1) that the employee had at least one day of verified employment at a DOE 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 requirement 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 because of contact with beryllium dust particles or fumes. 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. The DEEOIC requirement to accept beryllium sensitivity is one abnormal test.

b. Evaluation. A physician is required to validate the results of an abnormal BeLPT/BeLTT or beryllium patch test 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 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 Contract Medical Consultant (CMC)).

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 a laboratory test that measures 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 sufficiently 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 a laboratory test performed on lung tissue that is washed from the lungs. The lung wash contains lung tissue 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 are satisfied for a beryllium sensitivity claim under Part B, the employee receives medical monitoring (which includes all tests for CBD), treatment, and therapy for the condition effective on the date of filing. Unlike for Chronic Beryllium Disease (CBD), the Act provides for no lump-sum compensation for beryllium sensitivity under Part B.

f. Benefits Under Part E. Once the medical, employment, and causation criteria are satisfied for a beryllium sensitivity claim under Part E, the employee receives 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 CE finds that the criteria for those benefits are satisfied.

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 or diagnosed with a chronic respiratory

disorder is dated prior to January 1, 1993, the pre-1993 CBD criteria should be used. Evidence of a chronic respiratory disorder includes records communicating existence of a long term, prolonged pulmonary disease process. References to acute pulmonary conditions, such as short-term pulmonary distress associated with temporary viral or bacterial infection do not qualify as a chronic respiratory disorder. Pulmonary testing performed in occupational or medical settings, which identify abnormalities, are not appropriate to document a chronic respiratory disorder, unless interpreted as such by a physician. In situations where it is critical that the question of whether historical documentation communicates the existence of a chronic respiratory disorder, the CE is to undertake development to allow for a physician chosen by the claimant to provide clarification, or when the claimant is unable to provide such evidence, seek the input of a CMC.

If the earliest dated document showing a chronic respiratory disorder lists a date after January 1, 1993, the post-1993 CBD criteria should be used. If the employee sought treatment before 1993, but the medical documentation relating to the treating document is dated on or after January 1, 1993, the pre-1993 CBD criteria should be used. In this situation, the medical evidence is to clearly communicate the fact that treatment occurred prior to 1993.

To establish pre-1993 CBD, the medical documentation is to 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 (including the results of an abnormal mediastinal lymph node biopsy); 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).

The interpretation of whether a diagnostic test is "characteristic" or "consistent with" relate to a physician's opinion as to whether the test is indicative of chronic beryllium disease. CEs are not to interpret medical/diagnostic tests. If no physician interpretation exists, or if the CE is unsure whether the findings are characteristic or consistent with CBD, he or she is to obtain clarification from the treating physician or a CMC.

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. Chest X-ray findings that a physician may commonly communicate as characteristic of CBD include:

(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 have 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 CMC 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 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 a physician may reference as 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 that a physician may reference as characteristic of CBD:

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

**HRCT = high-resolution computed tomography*

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 CMC 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 physician may reference the existence of lung pathology consistent with CBD in a pathology report. The opinion of the physician will generally result in his or her examination of specific diagnostic test results or other results from examination. If a pathology report does not include a physician's interpretation, or if the CE is unsure whether the findings are consistent with CBD, the CE obtains clarification from the treating physician or a CMC.

g. Clinical course consistent with chronic respiratory disorder may include the following disorders and methods of treatment that a physician finds relevant in his or her assessment relating to CBD:

(1) Hypoxemia requires supplemental oxygen and supplies.

(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.

In addition to the three criteria listed, a mediastinal lymph node biopsy interpreted by a physician as evidence of "lung pathology consistent with CBD" may be used to establish CBD. A mediastinal lymph node biopsy is not the equivalent of a "lung biopsy" and, as such, does not substitute for such in the assessment of a post-1993 CBD claim. The evidence has to be interpreted as "lung pathology." A mediastinal lymph node is not dispositive proof of CBD in the same way as a lung biopsy.

a. Lung Biopsy.

(1) The term "lung biopsy" is any sampling of lung tissue to assess the possibility of disease. 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 history of the claimant's LPT results (if possible). Specifically, the physician should address whether the claimant has a 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.

(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.

b. Lymphocytic Process. A lymphocytic process consistent with CBD is measured in the lung 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 >15% lymphocytes is considered a BAL lymphocytosis, but physician interpretation is paramount); or

(4) BAL Beryllium Lymphocyte Proliferation Test (BeLPT) showing that the lymphocytes washed from the lungs react/respond to beryllium salts. This includes an abnormal BeLPT/BeLTT, performed on either blood or lung lavage cells, or a positive beryllium patch test.

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, a physician evaluates the results of the CAT scan 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 CMC 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 recognized as 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 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 conflicts between the pre-1993 and post-1993 standard. This will most commonly occur where the pre-1993

criteria apply, but post-1993 evidence exists suggestive that an employee does not have CBD. For example, a claim contains a post-1993 BeLPT with normal results and medical evidence meeting the pre-1993 CBD criteria (i.e., evidence of chronic respiratory disorder prior to 1993 and three of the five diagnostic criteria). In these situations, the CE proceeds with acceptance, if the necessary criteria for a pre-1993 or post-1993 CBD claim are met.

b. Referral to a CMC. CEs should refer claims to a CMC for a medical review after all means of obtaining the evidence from the treating physician is exhausted. The CE may also refer cases to a CMC 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 the CE makes a referral to a CMC, he or she is to send all the medical records in the case file to the CMC for review. Examples of situations when a referral is needed include:

(1) Assessment of pre-1993 medical evidence to determine if the claimant suffered from a chronic respiratory disorder;

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

(3) 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 CMC, when properly supported by medical rationale, carries significant probative value. However, the CE has to assess carefully the weight of medical evidence whenever there is a conflict between two physicians. The CE is to communicate clearly his or her assessment of the weight of medical evidence in any recommended decision to clearly explain the reasons why one physician's opinion takes precedence over another.

c. Beryllium Sensitivity Decision When CBD Is Claimed.

When CBD is claimed on Form EE-1 for a living employee, but evidence supports the existence of beryllium sensitivity only, the CE issues a Recommended Decision to accept for beryllium sensitivity and deny the claim for CBD. If at a later date, the district office receives evidence that the employee's beryllium sensitivity has progressed to chronic beryllium disease, it can initiate a reopening to resume development of the existing CBD claim. The claimant may also file a reopening request to resume development of his or her CBD claim, if new medical evidence supports the claim.

9. Beryllium Sensitivity and CBD, Part E. A BeLPT or BeLTT are definitive tests for confirming beryllium sensitivity. As such, a positive BeLPT or BeLTT is required for any Part E claim for CBD that cannot be processed based on a positive determination under Part B. For additional discussion regarding the requirements for establishing beryllium sensitivity, refer to Section 5 (Beryllium Sensitivity) of this chapter.

a. Beryllium Sensitivity. As under Part B, beryllium sensitivity is established by submitting the results of one beryllium patch test, one abnormal beryllium lymphocyte proliferation test (BeLPT) or BeLTT result indicating that an employee's blood shows 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, in addition to a positive BeLPT or BeLTT, the claimant is to submit a rationalized medical report including a diagnosis of CBD from a qualified physician to establish CBD under Part E. The rationalized report should contain an evaluation of the employee's medical condition and the physician's opinion whether 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 CMC. If the CE determines that the totality of the evidence is inconclusive in establishing the diagnosis or causation for the claimed condition, he or she is to refer the matter to a CMC for review. This is

especially true 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.

The accepted "Other Chronic Pulmonary Diseases" are:

(1) Asbestosis;

(2) Silicosis;

(3) Chronic Obstructive Pulmonary Disease (COPD);

(4) Emphysema; and

(5) Pulmonary Fibrosis

Once the CE has collected the medical, employment, and causation evidence necessary for a beryllium sensitivity or CBD claim under Part E, the employee receives medical monitoring, treatment, and therapy for the condition(s) effective to the date of filing. In addition, the employee is eligible for lump-sum compensation for impairment and/or wage-loss. In the case of a deceased employee, if the evidence supports that he or she had work-related CBD that contributed to death, the employee's qualified survivors are eligible for lump-sum compensation.

10. Presumption of CBD, Diagnosis of Sarcoidosis, and History of Beryllium Exposure. Sarcoidosis is a disease that represents as inflammation of cells that form into nodules or granulomas. Sarcoidosis can occur in different organ systems. Under Part B, the DEEOIC recognizes that a diagnosis of pulmonary sarcoidosis, especially in cases with pre-1993 diagnosis dates, could represent a misdiagnosis for CBD. As such, a diagnosis of pulmonary sarcoidosis is not medically appropriate under Part B if there is a documented history of beryllium exposure. In

those situations, a diagnosis of sarcoidosis is evaluated as a claim for beryllium sensitivity and/or CBD. Under Part E, if there is a diagnosis of pulmonary sarcoidosis, but no affirmative evidence in the form of a positive BeLPT or BeLTT exists, the CE adjudicates the condition as sarcoidosis, not CBD.

Part B of the EEOICPA specifies diagnostic criteria necessary to qualify for compensation. As such, in the case of a diagnosed pulmonary sarcoidosis being treated as beryllium sensitivity or CBD, it is necessary for the CE to obtain the evidence satisfying pre-1993 or post-1993 CBD criteria enumerated under the Act.

For a Part E claim, the CE can evaluate a pulmonary sarcoidosis claim as CBD; however, a positive BeLPT or BeLTT is necessary to accept a diagnosis of beryllium sensitivity/CBD under Part E. Without affirmative evidence in the form of a positive beryllium BeLPT or BeLTT, the CE is to proceed with the adjudication of the claim as one for a diagnosis of sarcoidosis.

In cases where there is medical evidence that establishes a diagnosis of pulmonary sarcoidosis and a positive BeLPT or BeLTT, the CE is to obtain a physician's opinion regarding whether it is "at least as likely as not" that exposure was a significant factor in aggravating, contributing to, or causing CBD.

11. Consequential Illnesses from CBD or its Treatment.

For information about consequential illnesses from CBD, see EEOICPA PM 2-1500.

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) describe the employment requirements for an employee diagnosed with chronic silicosis. The CE reviews the evidence 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 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 (physician's signature not required), 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 the employee was present at a DOE or RECA Section 5 facility where silica is known to have been present. There are no required number of days of employment under Part E. The initial occupational exposure to silica dust needs to precede the onset of silicosis by at least 10 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 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 CMC if the requested evidence is not submitted. The CE evaluates the CMC 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 silica in the lungs. Pneumoconiosis is oftentimes a broad categorization physicians use for various subtypes of pulmonary disease. For example, asbestosis is a type of pneumoconiosis, as is silicosis. It is not appropriate for a CE to make

assumptions that a diagnosis of pneumoconiosis is equivalent to any number of its subtypes without seeking clarification from a physician. Pneumoconiosis is a Part E covered illness only. A physician's diagnosis of pneumoconiosis can be supported by clinical evidence from the physician, along with other affirmative diagnostic evidence including:

a. A written diagnosis of pneumoconiosis made by a physician;

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;

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

d. 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

e. Lung biopsy findings consistent with pneumoconiosis.

14. Asbestosis, Part E. Asbestosis or asbestos-related lung disease 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.

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. In assessing claims for an employee with a diagnosis of asbestosis, the CE is to consider several factors when adjudicating the claim:

a. Employment/Exposure Requirements. The CE verifies that the employee was a covered DOE contractor 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.

b. Medical Evidence. Various types of medical evidence can support a physician's 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. A diagnosis of asbestosis is established with the presentation of medical evidence that identifies the employee as having developed the condition, along with a date of diagnosis. Sources of evidence include:

(1) The opinion of a qualified physician that available medical and diagnostic evidence is sufficiently probative to document a diagnosis of asbestosis. In instances where the evidence is suggestive of an asbestos-related lung disease and further development with the claimant or treating physician has been unsuccessful, the CE is to refer the matter to a CMC for review. Diagnostic evidence that is indicative of asbestosis or asbestos-related lung disease includes:

(a) 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.

(b) 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.

(c) 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.

(d) 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.

(2) DOE Former Worker Screening Program (FWP) results which document assessment with abnormal diagnostic findings and physician assessment resulting in a positive finding of asbestosis or asbestos-related lung disease.

(3) 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 obtain a well-rationalized conclusion from a physician 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 is established.

c. Assessing asbestosis claims. DEEOIC accepts that asbestos was a common toxic substance that existed throughout all DOE facilities. While asbestos did exist at DOE facilities, the nature of an employee's exposure would have varied based on different factors such as the period that the employee worked, the type of work performed, and the location of employment.

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

Part E claims involving a confirmed diagnosis of mesothelioma are accepted, given the requirements for asbestos exposure at a covered facility (e.g., medical and diagnostic requirements, employment/exposure requirements) 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 or pleural effusions can be accepted, the CE issues a Recommended Decision to deny the claim for asbestosis and accept for pleural plaques or pleural effusions.

If at a later date, the district office receives evidence that the employee's pleural plaques or pleural effusions has progressed to asbestosis, it can initiate a reopening to resume development of the existing asbestosis claim. The claimant may also file a reopening request to resume development of his or her asbestosis claim, if new medical evidence supports the claim.

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

(1) Medical evidence supporting a claim for pleural plaques and pleural effusions includes the following:

(a) A diagnosis of pleural plaques or pleural effusions made by a physician;

(b) 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.

(2) When development is to occur with the claimant's physician or CMC:

(a) If the totality of the medical evidence is inconclusive or insufficient to establish a diagnosis of pleural plaques or pleural effusions.

(b) 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

(ii) Pleural effusions, 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;

c. Lung Fibrosis (Pulmonary Fibrosis). Lung fibrosis is commonly referred to as scarring of the lung. With lung fibrosis, normal lung tissue is replaced by the accumulation of connective fibrosis tissue.

(1) Medical Evidence of lung fibrosis. A diagnosis of lung fibrosis is made by a physician and is generally supported by diagnostic evidence including:

(a) 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;

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

(c) 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.

(2) Idiopathic pulmonary fibrosis. "Idiopathic" means that the causative agent is unknown. In cases where a diagnosis of idiopathic pulmonary fibrosis is provided, with no other supportive clarifying medical evidence, the CE should not conduct an exposure analysis or refer the case file for an IH review. Cases of this type can be denied.

(3) Synonymous fibrotic lung conditions. DEEOIC has determined that respiratory illnesses such as restrictive/interstitial lung disease, pulmonary fibrosis and/or pneumoconiosis generally refer to the same disease process. These illnesses include a process by which normal lung tissue is replaced by fibrotic (scar) tissue that interferes with normal lung functioning. This process results in the irreversible loss of oxygen diffusion, which is the capacity of the lung to transfer carbon dioxide in the bloodstream. As such, the DEEOIC made a programmatic determination to treat these terms/claimed conditions, for purposes of developing Part E cases under EEOICPA, synonymously.

DEEOIC guidelines on fibrotic lung diagnoses provide that for synonymous and interchangeable diagnoses in terms of development and adjudication, the CE has been directed not to develop for each of these fibrotic lung conditions as a separate claim as they are essentially the same diagnosis to the same organ. The guidelines also note that if it is determined that "it is 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 pneumoconiosis, pulmonary fibrosis, or interstitial lung disease of the employee, then accept all of the conditions, provided there is a valid medical diagnosis in the case file.

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.

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 CMC.

(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.

(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.

17. Parkinsonism. Parkinsonism is a neurological disorder or syndrome that can arise from a number or sources, including toxic exposure, drugs, and Parkinson's disease (PD). There is no clinical test or method for distinguishing Parkinsonism from PD and the two terms are often used interchangeably since the symptoms are the same. For the purpose of claim adjudication under Part E, the CE is to consider the medical conditions of PD, Parkinsonism, or any other reasonable alias as synonymous.

18. 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.

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 1 have been created to provide information relating to the assessment of the following conditions: kidney disease; occupational asthma; 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.

Exhibit 1: Matrix for Confirming Sufficient Evidence of Non-Cancerous Covered Illnesses

Matrix for Confirming Sufficient Evidence of Non-Cancerous Covered Illnesses

SILICOSIS, CHRONIC

Criteria	Common characteristics for the diagnosis of the medical condition
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates
Latency*	10 years or more
Medical Evidence for illness and diagnostic testing criteria	A written diagnosis of silicosis made by a medical doctor **And** Any one 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; b. Results from a chest x-ray or computer assisted tomography (CT) or other imaging technique that are consistent with silicosis; or • Such as nodules, or fibrosis usually with upper lung zone predominance c. Lung biopsy findings consistent with silicosis • Such as silicotic nodules.
Additional considerations for causation	If the evidence is insufficient, physician review required.

* The actual latency period for disease development is a function of the duration and intensity of exposure.
*** References utilized include American Thoracic Society consensus statement.

Exhibit 1

SILICOSIS, ACUTE

Criteria	Common characteristics for the diagnosis of the medical condition
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates
Latency*	Weeks to months
Medical Evidence for illness and diagnostic testing criteria	Any one of the following two criteria: a. A written diagnosis of acute silicosis made by a medical doctor; or b. Death certificate or other acceptable documentation of death due to acute silicosis **And** 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.
Additional considerations for causation	Physician review required

* The actual latency period for the development is a function of the exposure's duration and intensity of exposure.
***References utilized include American Thoracic Society consensus statement.

Exhibit 1

SILICOSIS, ACCELERATED

Criteria	Common characteristics for the diagnosis of the medical condition
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates
Latency*	2-5 years
Medical Evidence for illness and diagnostic testing criteria	A written diagnosis of accelerated silicosis made by a medical doctor **And** Any one 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; b. Results from a chest x-ray or computer assisted tomography (CT) or other imaging technique that are consistent with silicosis; or • Such as nodules or fibrosis usually with upper lung zone predominance c. Lung biopsy findings consistent with silicosis • Such as silicotic nodules.
Additional considerations for causation	Physician review required

* The actual latency period for the development of this disease is a function of the duration and intensity of exposure.
*** References utilized include American Thoracic Society consensus statement.

Exhibit 1

SILICOSIS, COMPLICATED

Criteria	Common characteristics for the diagnosis of the medical condition
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates
Latency*	Years to decades
Medical Evidence for illness and diagnostic testing criteria	A written diagnosis of progressive massive fibrosis (PMF) or complicated silicosis made by a medical doctor **And** Results from a chest x-ray or computer assisted tomography (CT) or other imaging technique that are consistent with PMF • 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.
Additional considerations for causation	Physician review required

* The actual latency period for the development of this disease is a function of the duration and intensity of exposure.
*** References utilized include American Thoracic Society consensus statement.

Exhibit 1

PNEUMOCONIOSIS

Criteria	Common characteristics for the diagnosis of the medical condition
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates
Latency*	Years
Medical Evidence for illness and diagnostic testing criteria	Written evidence of one of the following two criteria: a. A written diagnosis of pneumoconiosis made by a medical doctor; or b. Results of breathing tests (PFTs or spirometry) showing a restrictive lung pattern FVC < 80% predicted **And** Any one 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; 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; or c. Lung biopsy findings consistent with pneumoconiosis.
Additional considerations for causation	If the evidence is insufficient, physician review 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.

Exhibit 1

MESOTHELIOMA

Criteria	Common characteristics for the diagnosis of the medical condition
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates
Latency*	30-50 years
Medical Evidence for illness and diagnostic testing criteria	A written diagnosis of mesothelioma made by a medical doctor **And** Pathology report consistent with mesothelioma from surgical or biopsy specimen.
Additional considerations for causation	If the evidence is insufficient, physician review 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.
*** References utilized include American Thoracic Society consensus statement.

Exhibit 1

ASBESTOS RELATED DISORDERS

Criteria	Common characteristics for the diagnosis of the medical condition
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates
Latency*	Pleural plaques: 20 or more years Pleural effusions: 5-30 years
Medical Evidence for illness and diagnostic testing criteria	A diagnosis of pleural plaques or pleural effusions made by a medical doctor **And** Results from a chest x-ray or computer assisted tomography (CT) or other imaging technique that are consistent with these disorders • 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.
Additional considerations for causation	Physician review required

* The actual latency period for the development of this disease is a function of the duration and intensity of exposure.
*** References utilized include American Thoracic Society consensus statement.

Exhibit 1

LUNG FIBROSIS

Criteria	Common characteristics for the diagnosis of the medical condition
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates
Latency*	Years
Medical Evidence for illness and diagnostic testing criteria	A written diagnosis of lung fibrosis made by a medical doctor **And** 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; • 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; or • Such as FVC <80% predicted c. Lung biopsy findings consistent with fibrosis **And** There is no evidence in the medical record that the lung fibrosis is present due to another disease process.
Additional considerations for causation	If the evidence is insufficient, physician review 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.

Exhibit 1

CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

Criteria	Common characteristics for the diagnosis of the medical condition
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates
Latency*	Years
Medical Evidence for illness and diagnostic testing criteria	A written diagnosis of COPD or chronic bronchitis made by a medical doctor • 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 **And** Any one of the following four criteria: a. Abnormal results from Arterial Blood Gas (ABG) Testing b. Results from a chest x-ray or other imaging technique that are consistent with COPD • Such as air trapping, flattening of diaphragms, enlarged lung fields, interstitial patterns, scarring, or other abnormalities c. Results of PFTs or spirometry showing an obstructive or mixed pattern • $FEV_1/FVC < 70\%$ and $FEV_1 < 80\%$ predicted. d. Results from Bronchoscopy showing obstruction **And** The employee has a history of being a never smoker*** **And** There is no other lung disease present that would account for the findings.
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.

* 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.
***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.

Exhibit 1

KIDNEY DISEASE

Criteria	Common characteristics for the diagnosis of the medical condition
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates
Latency*	Months or years
Medical Evidence for illness and diagnostic testing criteria	Any one of the following two criteria a. A written diagnosis of kidney disease made by a medical doctor • Other terms are chronic renal disease, chronic renal failure, renal insufficiency b. The worker required dialysis **And** The worker does not have high blood pressure or diabetes **And** The type of kidney disease diagnosed is consistent with one known to be caused by the identified toxic substance.
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.

* 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.

Exhibit 1

ASTHMA, OCCUPATIONAL

Criteria	Common characteristics for the diagnosis of the medical condition
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates
Latency*	Weeks, months, or years
Medical Evidence for illness and diagnostic testing criteria	A written diagnosis of occupational asthma or asthma caused by toxic substance made by a medical doctor **And** The diagnosis of asthma was made based on any one of the following criteria a. Methacholine challenge test results showing a $PC_{20} \leq 8$ mg/ml; b. Post-bronchocodialator reversibility of $FEV_1 \geq 12\%$ and 200 ml; or c. Post-bronchocodialator reversibility of $FEV_1 \geq 12\%$, but <20 ml, with subsequent improvement in $FEV_1 \geq 20\%$ after steroid trial **And**
Additional considerations for causation	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 **And** One or more of the following criteria: a. work-related change in FEV_1 or PEF rate; or b. work-related change in bronchial hyperresponsiveness; or c. positive response to specific inhalation challenge test (note this is not recommended if not already performed).

* 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.

Exhibit 1

NEUROPATHY, TOXIC

Criteria	Common characteristics for the diagnosis of the medical condition
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates
Latency*	Days, months, or years
Medical Evidence for illness and diagnostic testing criteria	A written diagnosis of peripheral neuropathy, toxic neuropathy, or neuropathy due to a toxic substance **And** 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 a. Symptoms consistent with the classic syndrome caused by the specific toxic substance • Sensory; • Motor; or • Sensorimotor b. Signs consistent with the classic syndrome caused by the specific toxic substance • Decreased or abnormal distal sensation a. Such as stocking-glove numbness, allodynia, and/or hyperalgesia • Decreased or absent distal reflexes • Distal muscle weakness and/or atrophy c. Results of electrodiagnostic studies consistent with a neuropathy caused by the specific toxic substance • Should include both needle EMG and nerve conduction studies (NCS).
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.

* 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.

Exhibit 1

ENCEPHALOPATHY, CHRONIC TOXIC

Criteria	Common characteristics for the diagnosis of the medical condition
DOE exposure criteria*	DOE Facilities Specific job titles/ processes Applicable dates
Latency*	Years
Medical Evidence for illness and diagnostic testing criteria	A written diagnosis of chronic toxic encephalopathy (or analogus condition) made by a medical doctor **And** A formal neuropsychological assessment that included a battery of neurobehavioral tests is consistent with the diagnosis. 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.

* 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.