

**STATE OF VERMONT  
DEPARTMENT OF LABOR**

Patricia Alexander

Opinion No. 08-10WC

v.

By: Jane Dimotsis, Esq.  
Sal Spinosa, Esq.  
Hearing Officers

General Electric

For: Patricia Moulton Powden  
Commissioner

State File No. Z-53175

**OPINION AND ORDER**

Hearing held in Montpelier on September 9 and 11, 2009

Record closed on October 14, 2009

**APPEARANCES:**

Michael Green, Esq, for Claimant  
Glenn Morgan, Esq., for Defendant

**ISSUES PRESENTED:**

1. Did Claimant develop chronic beryllium disease as a result of working for Defendant?
2. If yes, what is the extent of Claimant's permanent partial impairment?
3. Is Claimant's current claim time barred under the provisions of 21 V.S.A. §660(b)?

**EXHIBITS:**

Joint Exhibit I: Medical records

Claimant's Exhibit 1: *Curriculum Vitae*, Carrie Redlich, M.D.

Claimant's Exhibit 2: *Chronic beryllium disease*, article from [www.uptodate.com](http://www.uptodate.com)

Claimant's Exhibit 3: Excerpt from Exhibit 2

Claimant's Exhibit 4: Excerpt from Exhibit 2

Claimant's Exhibit 5: BeLPT test results from National Jewish Medical & Research Center

Claimant's Exhibit 6: Letter from Glenn Morgan to Jane Dimotsis, August 19, 2009

Claimant's Exhibit 7: Letter from Dr. Cecile Rose, August 27, 2009

Claimant's Exhibit 8: Form 2 and Addendum filed by Martha Driscoll

Claimant's Exhibit 9: Fax from Martha Driscoll to Michael Green, September 20, 2007

Claimant's Exhibit 10: Report of Dr. David Rosenburg, March 10, 2008

Claimant's Exhibit 11: PowerPoint slides of Dr. Redlich's testimony

Claimant's Exhibit 12: *Managing Health Effects of Beryllium Exposure* (2008), article from National Academy of Sciences

Claimant's Exhibit 13: *Preventing Adverse Health Effects from Exposure to Beryllium in Dental Laboratories*, article from U.S. Department of Labor

Claimant's Exhibit 14: *Optimizing BeLPT Criteria for Beryllium Sensitization* (2008), Dr. D. C. Middleton

Defendant's Exhibit A: *Chronic Beryllium Disease and Sensitization at a Beryllium Processing Facility* (2005), Rosenman

Defendant's Exhibit B: *Is Chronic Beryllium Disease Sarcoidosis of Known Etiology?* (2003), Rossman

Defendant's Exhibit C: *Diagnosis of Chronic Beryllium Disease Within Cohorts of Sarcoidosis Patients* (2006), Muller-Quernheim

Defendant's Exhibit D: *Curriculum Vitae*, David Rosenburg, M.D.

Defendant's Exhibit E: *Statement of Sarcoidosis* (1999), article from American Thoracic Society

Defendant's Exhibit F: Dr. Rosenburg, PowerPoint slides regarding BeLPT

Defendant's Exhibit G: *Rocky Flats Beryllium Health Surveillance* (1996), Stange

Defendant's Exhibit H: *Sensitization and Chronic Beryllium Disease Among Workers in Copper-Beryllium Distribution Centers* (2006), Stanton

Defendant's Exhibit I: *Chronic Beryllium Disease* (August 28, 2009), National Jewish Health website excerpt

Defendant's Exhibit J: Summary of Claimant's work history

Defendant's Exhibit K: Industrial hygiene reports

Defendant's Exhibit L: Industrial hygiene summary

Defendant's Exhibit M: United States Department of Labor, [www.osha.gov/SLTC/beryllium/otherresources.html](http://www.osha.gov/SLTC/beryllium/otherresources.html)

Defendant's Exhibit N: *Beryllium Lymphocyte Proliferation Test FAQs* (August 28, 2009), National Jewish Health

Defendant's Exhibit O: *Misdiagnosis of Sarcoidosis in Patients With Chronic Beryllium Disease* (2003), Fireman

Defendant's Exhibit P: *Influence of MHC CLASS II in Susceptibility to Beryllium Sensitization and Chronic Beryllium Disease* (2003), Maier

Defendant's Exhibit Q: *Proliferation Response of Bronchoalveolar Lymphocytes to Beryllium* (1988), Rossman

Defendant's Exhibit R: *Curriculum Vitae*, Thomas Smith, M.D.

Defendant's Exhibit S: Consultation note, May 21, 2009, Thomas Smith, M.D.

Defendant's Exhibit T: Letter from Dr. Smith to Martha Driscoll, June 11, 2009

Defendant's Exhibit U: Letter from Dr. Smith to Martha Driscoll regarding impairment rating, June 11, 2009

**CLAIM:**

Permanent partial disability benefits pursuant to 21 V.S.A. §648

Medical benefits pursuant to 21 V.S.A. §640

Interest, costs and attorney fees pursuant to 21 V.S.A. §§664 and 678

**FINDINGS OF FACT:**

1. At all times relevant to these proceedings, Claimant was an employee and Defendant was her employer as those terms are defined in Vermont's Workers' Compensation Act.
2. Judicial notice is taken of all relevant forms contained in the Department's file relating to this claim. Judicial notice also is taken of the relevant portions of the *AMA Guides to the Evaluation of Permanent Impairment, 5<sup>th</sup> ed.* (the "AMA Guides").

*Claimant's Employment*

3. Beginning in 1975, Claimant worked at Defendant's Rutland, Vermont plants for approximately twenty years.
4. At its Rutland plants Defendant manufactured, among other things, turbine engine blades for the nuclear and aerospace industries. The blades are made from metal alloys which include, because of its unique properties, the metal beryllium. Copper-beryllium alloy is a common metal used for blade production, though not the only one.
5. Although Claimant worked different jobs at Defendant's plants, her principal job was "bencher." She used grinding and polishing wheels to remove imperfections and achieve the required blade size and shape. Claimant worked at a benching well, or sink, which had a glass protective shield and a suction apparatus to remove airborne material. Claimant testified that she was covered in "dust" after each workday. Her work station was near that of other benchers who performed the same duties.
6. Although Claimant herself did not work on copper-beryllium alloy blades, for approximately six and a half years she worked near the copper-beryllium benching stations. Defendant's plant air samplings confirmed the airborne presence of beryllium at low levels. Claimant was never individually tested for beryllium exposure while in Defendant's employment.
7. Claimant retired in 1996 due to knee problems and has not returned to work. She had no known respiratory problems when she retired.

Claimant's Medical Condition

8. After her retirement Claimant experienced shortness of breath. As the problem worsened, she eventually sought medical attention. After a regimen of medications failed to relieve her breathing problems, Claimant underwent a lung biopsy in April 2001. The test revealed a lung tissue condition that supported a diagnosis of sarcoidosis. Sarcoidosis is an inflammatory lung disease of unknown origin characterized by small nodules called granulomas.
9. Until 2007 Claimant's medical providers continued to treat her for sarcoidosis. These treatments included strong, regular doses of steroid medications. During this time Claimant developed several other serious medical conditions, some of which were causally related to her steroid medications.
10. In 2007 Dr. Mar became Claimant's treating pulmonologist. Claimant was continuing to experience serious respiratory problems. Based on her own research, she independently contacted the Vermont Department of Health. There she learned that exposure to beryllium could cause the same symptoms as those she was experiencing. In order to explore this diagnosis further, Dr. Mar arranged for Claimant to undergo a beryllium lymphocyte proliferation test (BeLPT). In May 2007 he sent a sample of Claimant's blood to the National Jewish Medical and Research Center in Denver, Colorado for testing. The results were reported as positive for beryllium.
11. Based on the results of the BeLPT blood test, in May 2007 Dr. Mar changed his diagnosis of Claimant's lung condition from sarcoidosis to chronic beryllium disease (CBD). At the same time, Dr. Mar sought a second diagnostic opinion from Dr. Davis, a pulmonologist at Fletcher Allen Health Care. Dr. Davis examined Claimant on May 31, 2007 and reviewed both her medical and work history. He confirmed the diagnosis of CBD.
12. On August 22, 2007 Claimant filed a Notice of Injury and Claim for Compensation (Form 5), in which she asserted that her chronic lung disease was causally related to beryllium exposure at work. Defendant's Form 2 Denial of Benefits was filed on September 20, 2007.
13. Claimant is currently 68 years old. Due to her respiratory limitations she uses a motorized scooter to get around and requires bottled oxygen at all times.

*CBD and Permanent Impairment Ratings*

14. Dr. Carrie Redlich is a professor of medicine and acting program director of the Occupational and Environmental Medicine Program at Yale University. Her primary area of expertise is occupational and environmental lung disease. She is a nationally recognized expert on immune mediated lung diseases,<sup>1</sup> including CBD. Dr. Redlich has occupied leadership roles in numerous pulmonary disease organizations and also has authored both journal articles and a textbook on the subject. Her work has included the study of low level exposures to beryllium. Dr. Redlich splits her time among teaching, research and clinical practice. She is a reviewer of the pulmonary impairment guidelines of the *AMA Guides*.
15. Dr. Redlich reviewed Claimant's medical records and concluded that Claimant had CBD. She found clear evidence of the three key elements required for a CBD diagnosis:
  - Exposure to workplace beryllium;
  - Lung disease, specifically as evidenced by the granulomas present in Claimant's April 2001 biopsy; and
  - Positive BeLPT findings.
16. Dr. Redlich noted that unlike other more common airborne occupational diseases, an immune mediated disease such as CBD is triggered in susceptible individuals by dosage levels that are difficult to define and well below the standards set by the Occupational Safety and Health Administration. According to Dr. Redlich, even a limited exposure to beryllium can trigger the disease. The onset of symptoms can be delayed for some time after exposure.
17. Dr. Redlich testified that CBD is commonly misdiagnosed as sarcoidosis because the granulomas characteristic of both diseases appear identical. In Claimant's case, the differential diagnosis was made based on (a) Claimant's work place exposure to beryllium; and (b) her positive BeLPT results. Adding those two elements to the analysis, Dr. Redlich concluded that CBD was the correct diagnosis. Additionally, Dr. Redlich pointed to Claimant's poor response to treatment and the absence of other pulmonary or additional organ involvement as support for her CBD diagnosis.
18. Dr. Redlich refuted Defendant's claim that a second BeLPT was required to confirm a diagnosis of CBD. She conceded that according to the relevant medical literature a second test is appropriate in the context of screening otherwise healthy, asymptomatic workers. In those situations the second test provides the higher level of certainty necessary to justify further, more invasive diagnostic procedures such as lung biopsy. Dr. Redlich differentiated that setting from Claimant's situation, however. In Claimant's case, in addition to having had actual exposure to beryllium she already had undergone a biopsy, which clearly showed lung disease, prior to her BeLPT. In that circumstance, a second BeLPT was not necessary.

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<sup>1</sup> These diseases involve an immune system response to what is typically a very low dosage exposure.

19. Dr. Redlich consulted the *AMA Guides* to assess the extent of Claimant's permanent impairment. Based on her review of Claimant's lung function, Dr. Redlich assessed a class four, severely impaired, level of impairment. The whole person impairment range for that classification is from 51 to 100%. Dr. Redlich considered Claimant to be at the severe end of the range, and therefore rated her with a 90% whole person impairment.
20. Dr. David Rosenberg is an expert in pulmonary disease and occupational medicine. He has enjoyed numerous fellowships and teaching posts and is currently employed by the Cleveland Clinic. Dr. Rosenberg provides workplace hygiene protocols for numerous companies, has published peer reviewed articles on lung disease and has a clinical practice which includes 90% lung disease patients. Over the years, he has treated many more patients diagnosed with sarcoidosis than CBD.
21. Dr. Rosenberg opined that while it is possible that Claimant has CBD it is more likely that she has sarcoidosis. He agreed with the three diagnostic criteria identified by Dr. Redlich as necessary for a finding of CBD, but disagreed that they have been met sufficiently in Claimant's case.
22. Dr. Rosenberg testified that without a second BeLPT he cannot be certain that Claimant has CBD. By his own admission, however, the medical literature he cited in support of his contention referenced screenings performed on healthy, asymptomatic worker populations. Further, he cited medical literature critical of National Jewish's numerical test standards for beryllium sensitivity and described their results as a "low positive." Dr. Rosenberg testified that sarcoidosis is a diagnosis of exclusion and that he could not exclude CBD.
23. On May 18, 2009, Dr. Smith, head of the Pulmonary Care Department at Albany College, examined Claimant. Based on his examination and a review of the medical records available to him he reported that Claimant's symptoms were consistent with the criteria for CBD. Dr. Smith expressed no concern at that time over the single positive test for beryllium. Subsequently, however, on June 11, 2009 Dr. Smith altered his opinion. Citing the absence of a second BeLPT, Dr. Smith now concluded that Claimant suffered from sarcoidosis, not CBD. As support for his new opinion Dr. Smith referenced a medical paper that dealt with beryllium screening in a healthy, asymptomatic population. Dr. Smith admitted in his testimony that he was not an expert on CBD. He also admitted that if indeed Claimant had CBD, in his opinion it would be attributable to her work for Defendant.
24. Dr. Smith also evaluated the extent of Claimant's permanent impairment. In doing so, he continued to assume that Claimant suffered from sarcoidosis rather than CBD. Dr. Smith had difficulty separating Claimant's other health conditions from his pulmonary assessment. In the end, relying on medical reports provided to him, he assessed a class four pulmonary impairment, the same classification Dr. Redlich used in her impairment rating. Unlike Dr. Redlich, however, Dr. Smith rated Claimant at the lower end of the class four range, with a whole person impairment near 50%. In doing so, Dr. Smith admitted that he did not follow the *AMA Guides* protocol for rating pulmonary function impairment.

## CONCLUSIONS OF LAW:

### CBD or Sarcoidosis?

1. In workers' compensation cases, the claimant has the burden of establishing all facts essential to the rights asserted. *King v. Snide*, 144 Vt. 395, 399 (1984). He or she must establish by sufficient credible evidence the character and extent of the injury as well as the causal connection between the injury and the employment. *Egbert v. The Book Press*, 144 Vt. 367 (1984). There must be created in the mind of the trier of fact something more than a possibility, suspicion or surmise that the incidents complained of were the cause of the injury and the resulting disability, and the inference from the facts proved must be the more probable hypothesis. *Burton v. Holden Lumber Co.*, 112 Vt. 17 (1941); *Morse v. John E. Russell Corp.*, Opinion No. 40-92WC (May 7, 1993).
2. At issue here is whether Claimant has CBD or sarcoidosis. Claimant contends that she contracted CBD as a result of workplace exposure to beryllium over the many years of her employment for Defendant. Defendant argues that Claimant has not proven that she suffers from CBD because she has not undergone the proper diagnostic testing for the disease. Rather, Defendant asserts that Claimant more likely has sarcoidosis, which because of its unknown cause is not compensable. To resolve this issue requires careful review and analysis of conflicting medical evidence.
3. Where expert medical opinions are conflicting, the Commissioner traditionally uses a five-part test to determine which expert's opinion is the most persuasive: (1) the nature of treatment and the length of time there has been a patient-provider relationship; (2) whether the expert examined all pertinent records; (3) the clarity, thoroughness and objective support underlying the opinion; (4) the comprehensiveness of the evaluation; and (5) the qualifications of the experts, including training and experience. *Geiger v. Hawk Mountain Inn*, Opinion No. 37-03WC (September 17, 2003).
4. Applying the above test to the conflicting medical opinions offered in the current claim, I find Dr. Redlich's testimony to be the more credible and persuasive. Unlike Defendant's experts, Dr. Redlich has developed a convincing concentration on the subject of beryllium disease, from exposure to diagnosis. Her expertise is particularly suited to the issues in this case.
5. Dr. Redlich identified the three necessary components of a proper CBD diagnosis – workplace exposure, granulomas indicative of lung disease and positive BeLPT findings. As to the first component, Defendant does not deny the existence of beryllium within its plants, both as a component of the metal alloys used to manufacture turbine blades and as an airborne contaminant in and around Claimant's work stations. Defendant's attempt to minimize Claimant's exposure to airborne beryllium does not explain away the ability of very low doses over a short period of time to trigger even a delayed response in those susceptible to it.
6. As to the second component, Claimant's biopsy showed granulomas consistent with a diagnosis of either sarcoidosis or CBD.

7. After years of being misdiagnosed, Claimant's positive blood test for beryllium sensitization finally provided the third and last clue to a correct diagnosis – CBD. Defendant's insistence on a second BeLPT to confirm the diagnosis is not supported by the medical literature, which focuses on healthy, asymptomatic populations rather than individual patients, like Claimant, who already have exhibited clinical evidence of the disease.
8. I accept as credible Dr. Redlich's analysis, that under the circumstances of this case a second BeLPT was not necessary. I conclude, therefore, that Claimant has sustained her burden of proving that CBD is the appropriate diagnosis.

#### Impairment Ratings

9. I also accept Dr. Redlich's determination as to the extent of Claimant's permanent impairment. Although both Dr. Redlich and Dr. Smith used the same section of the *AMA Guides*, Dr. Redlich's rating was consistent with the required protocol for rating pulmonary impairment. Dr. Smith's was not. Dr. Redlich's greater familiarity with the *AMA Guides* makes her opinion even more credible. In accordance with her rating, therefore, I conclude that Claimant suffered a 90% whole person permanent impairment as a result of her work-related exposure to beryllium and subsequent development of CBD.

#### Statute of Limitations

10. Last, I find that Defendant's claim that Claimant's action is time-barred is without merit. The relevant statute, 21 V.S.A. §660(b), provides that “. . . a claim for occupational disease shall be made within two years of the date the occupational disease is reasonably discoverable and apparent.” Here, Claimant was misdiagnosed for years, during which time she had no reason to question her doctors' assessment of her condition. Her true condition did not become reasonably discoverable and apparent until May 2007, when Dr. Mar first diagnosed CBD on the basis of Claimant's positive BeLPT findings. Claimant filed her claim for workers' compensation benefits within three months thereafter, well within the applicable statute of limitations.
11. Claimant has submitted a request for costs totaling \$11,725.05 and attorney fees totaling \$12,759.00. An award of costs to a prevailing claimant is mandatory under 21 V.S.A. §678, and therefore these costs are awarded. As for attorney fees, these lie within the Commissioner's discretion. I find they are appropriate here, and therefore these are awarded as well.

**ORDER:**

Based on the foregoing findings of fact and conclusions of law, Defendant is hereby **ORDERED** to pay:

1. Permanent partial disability benefits in accordance with a 90% whole person impairment with interest in accordance with 21 V.S.A. §664, the commencement of payment yet to be determined by the parties;
2. Medical benefits covering all reasonable and necessary medical services and supplies causally related to treatment of Claimant's compensable work-related disease; and
3. Costs totaling \$11,725.05 and attorney fees totaling \$12,759.00.

**DATED** at Montpelier, Vermont this 19<sup>th</sup> day of February 2010.

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Patricia Moulton Powden  
Commissioner

Appeal:

Within 30 days after copies of this opinion have been mailed, either party may appeal questions of fact or mixed questions of law and fact to a superior court or questions of law to the Vermont Supreme Court. 21 V.S.A. §§670, 672.