Bates White's response to the Congressional Budget Office letter to Chairman Specter of December 19, 2005

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Prepared by Bates White, LLC

Contact information:

Charles E. Bates, Ph.D.
Direct 202.216.1145
Main 202.408.6110
charles.bates@bateswhite.com

Charles H. Mullin, Ph.D.
Direct 202.747.2084
Main 202.408.6110
charlie.mullin@bateswhite.com

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I. Executive summary

(1) The Congressional Budget Office (CBO) continues to make faulty assumptions that cause it to underestimate the cost of the FAIR Act by more than $140 billion. Below, we describe CBO's two fundamental errors. Correcting these two errors alone raises the CBO estimate to more than $260 billion, which exceeds available funds by more than $120 billion.

(2) First, the numbers presented in the CBO report show that more than 200,000 claimants will qualify for lung and other cancer claims (Level VI and Level VII). These claimants represent more than $90 billion in additional costs. Specifically, CBO asserts that 1.5 million individuals will receive compensation for non-malignant conditions, meaning they have bilateral pleural disease and five or more years of exposure. National cancer incidence rates establish that more than 200,000 of these claimants will develop lung or other cancer. In addition, settled historical non-malignant claimants will produce 30,000 lung and other cancer cases. Yet, CBO estimates that only 28,000 will file Level VI and Level VII claims. In other words, CBO asks us to believe that more than 85 percent of claimants who already have filed for lesser compensation will find it too burdensome to file the additional paper work required to collect their $200,000 to $800,000 entitlement. Accounting for the additional cancer costs for claimants already included in their forecast shows the CBO "cost" estimate should be over $210 billion.

(3) Second, the CBO "cost" estimate excludes several key expenditure categories that increase the cost of the FAIR Act by more than $50 billion, even under the best circumstances. In particular, the CBO "cost" estimate assigns zero cost to the following expenditure categories:

- Family members of qualifying workers
- Dormant claims that are still pending in the tort system
- Borrowing costs
- Residents of Libby, Montana and other similar areas
- Individuals who qualify via a CT scan

CBO acknowledges these costs exist, openly admits it excludes these costs, and yet persists to represent the range for the full cost of the Fund as $120 to $150 billion. Combining the additional cancer costs and the excluded expenditure categories shows that the CBO "cost" estimate should be over $260 billion.

CBO's missing $90 Billion		
CBO estimate of claimants with bilateral pleural disease (claims filing for Level I - Level V compensation)		1,500,000
Resolved historical claims with bilateral pleural disease	+	300,000
Subtotal	=	1,800,000
Background future lung and other cancer incidence rate (from SEER - administered by National Cancer Institute)	x	13.6%
Subtotal	=	245,000
Percent of previously filing claimants who will meet the additional Significant Occupational Exposure requirement for lung and other cancer claims (from Manville)	x	95%
Subtotal	=	230,000
Current CBO estimate of total future Level VI and Level VII claimants	–	28,000
Total missing future Level VI and Level VII claimants	=	200,000
Average payment for future Level VI and Level VII claimants	x	$ 450,000
Total missing future Level VI and Level VII payments to claimants who have or will file claims	=	**$90,000,000,000**

II. Bates White findings

1. Overview

(4) CBO is trying to have it both ways. CBO states that S.852 would cost $120 billion to $150 billion, leading a reader to conclude that the $140 billion in proposed funding is probably sufficient. Later CBO explains that its "cost" estimate excludes at least five major expenditure categories. CBO goes on to state, "[t]here is a significant likelihood that the Funds revenues would fall short of the amount needed to pay valid claims, debt service, and administrative costs."[1] These latter statements lead a reader to conclude that the $140 billion in proposed funding is probably insufficient.

(5) The Congressional Budget Office (CBO) continues to make faulty assumptions that cause it to underestimate the cost of the FAIR Act by more than $140 billion. Below, we describe CBO's two fundamental errors. Correcting these two errors alone raises the CBO estimate to more than $260 billion, which exceeds available funds by more than $120 billion.

(6) First, the numbers presented in the CBO report show that more than 200,000 claimants will qualify for lung and other cancer claims (Level VI and Level VII). These claimants represent more than $90 billion in additional costs. Specifically, CBO asserts that 1.5 million individuals will receive compensation for non-malignant conditions, meaning they have bilateral pleural disease and five or more years of exposure. National cancer incidence rates establish that more than 200,000 of these claimants will develop lung or other cancer. In addition, settled historical non-malignant claimants will produce 30,000 lung and other cancer cases. Yet, CBO estimates that only 28,000 will file Level VI and Level VII claims. In other words, CBO asks us to believe that more than 85 percent of claimants who already have filed for lesser compensation will find it too burdensome to file the additional paper work required to collect their $200,000 to $800,000 entitlement. Accounting for the additional cancer costs for claimants already included in their forecast shows the CBO "cost" estimate should be over $210 billion.

[1] CBO December 19, 2005 letter to Chairmen Specter page 2.

(7) Second, the CBO "cost" estimate excludes several key expenditure categories that increase the cost of the FAIR Act by more than $50 billion, even under the best circumstances. In particular, the CBO "cost" estimate assigns zero cost to the following expenditure categories:

- Family members of qualifying workers
- Dormant claims that are still pending in the tort system
- Borrowing costs
- Residents of Libby, Montana and other similar areas
- Individuals who qualify via a CT scan

CBO acknowledges these costs exist, openly admits it excludes these costs, and yet persists to represent the range for the full cost of the Fund as $120 billion to $150 billion. Combining the additional cancer costs and the excluded expenditure categories shows that the CBO "cost" estimate should be over $260 billion.

(8) The CBO letter to Chairman Specter dated December 19, 2005 makes two false assertions concerning the Bates White analysis. First, CBO errantly asserts that Bates White assumes that the Significant Occupational Exposure (SOE) criteria would not constrain potential claimants. CBO confuses the average duration of exposure on a given job with the average duration of exposure over an individual's career. Although the majority of jobs last less than three years, the typical career exceeds 20 years. Due to this confusion, CBO erroneously concludes that the SOE criteria would eliminate a significant portion of otherwise qualified claimants. Further, CBO ignores the five discrete steps Bates White takes to ensure that we include only individuals who would satisfy the SOE criteria.

(9) Second, CBO errantly asserts that the Bates White estimate of the prevalence of pleural abnormalities exceeds that of other experts. This assertion is demonstrably false. Other experts' forecasts, and the CBO forecast, of the number of non-malignant claims with pleural abnormalities confirm the Bates White estimate of the prevalence of pleural abnormalities. Further, CBO relies on the faulty analysis of NERA in making its assertion that Bates White overestimates the prevalence of pleural abnormalities. NERA is wrong when it claims that it corrected the biases in the medical articles we reviewed. What NERA has done is to correct only for the biases that cause the studies to overestimate the prevalence of pleural abnormalities; NERA does not correct for the other, perhaps more

important, biases that cause the studies to underestimate the prevalence of pleural abnormalities.

2. Lung and other cancer claims (Level VI and Level VII)

(10) The numbers presented in the CBO report show that more than 200,000 claimants will qualify for lung and other cancer claims (Level VI and Level VII). These claimants increase the CBO "cost" estimate more than $90 billion. Below we show that the CBO non-malignant claims forecast confirms Bates White forecast of the number of lung and other cancer claims. Also, we demonstrate that our forecast is consistent with the Manville claims data. Finally, S.852 would create a new, well-identified population of compensable lung and other cancer victims under disease Level VI and Level VII. We show that well-identified populations of compensable claimants historically file claims at high rates.

2.1. Non-malignant claim forecasts confirm Bates White analysis

(11) CBO forecasts that 1.5 million individuals will receive compensation for non-malignant conditions and 28,000 future claimants will receive compensation for lung cancer (Level VII) and other cancer (Level VI). Basic epidemiology demonstrates that these two forecasts are completely inconsistent. Over 200,000 of the 1.5 million non-malignant claimants will develop lung or other cancer. Thus, CBO asks us to believe that more than 85 percent of claimants who already have filed for lesser compensation will find it too burdensome to file the additional paper work required to collect their $200,000 to $800,000 entitlement. Including these lung and other cancer claims increases the CBO "cost" estimate more than $90 billion.

(12) CBO forecast that about 1.5 million individuals would receive compensation for non-malignant conditions. According to this forecasts, all of these claimants have bilateral pleural disease and five or more years of exposure. Further, the vast majority of these individuals will receive medical monitoring under disease Level I. A review of the Manville data show that 97 percent of Manville's historical non-malignant claimants who have at least five years of exposure satisfy the SOE for lung cancer (Level VII) and 94 percent satisfy the SOE for other cancer (Level VI).

(13) The National Cancer Institute (NCI) provides cancer incidence rates through the Surveillance Epidemiological and End Results (SEER) program. These cancer incidence rates show that eight percent of individuals with the same age profile as the forecasted non-malignant claimants will develop other cancers. An additional six percent will develop lung cancer. CBO acknowledges the reliability of these data. Applying these incidence rates to the 1.5 million non-malignant claimants forecast by CBO results in about 80,000 lung cancer victims and 120,000 other cancer victims. Despite these facts, CBO forecasts only 17,000 future lung cancer claims (Level VII) and 11,000 future other cancer claims (Level VI).

(14) The CBO's failure to include these lung and other cancer victims in its forecast is particularly hard to understand given that 1.27 million of these 1.5 million non-malignant claims (86 percent) are receiving medical monitoring as their Level I compensation. The purpose of medical monitoring is to provide early detection of these malignant conditions. Therefore, it is inexplicable for the CBO to assume that 85 percent of these cancer victims who have already filed a lesser claim against the Trust, have bilateral pleural disease, and satisfy the SOE criteria would choose not to collect their $200,000 to $800,000 entitlement.

2.2. Cancer incidence from historical non-malignant claimants

(15) Additional cancer claims will come from the population of non-malignant claimants that have already resolved their claim in the past. The Manville claims data can be used to calculate how many there are. Manville has received approximately 600,000 non-malignant claims. CBO forecasts that 300,000 of those claims are pending and the other 300,000 are settled. Accounting for national cancer incidence rates and the SOE criteria establishes that this population of 300,000 settled non-malignant claimant would produce about 30,000 lung and other cancer cases. Adding the lung and other cancer claims that will emerge from the historical non-malignant claimants to the that of the pending and future non-malignant claimants shows that there will be more than 230,000 claimants

2.3. Well-identified populations of compensable claimants file at high rates

(16) CBO acknowledges that once a population of compensable claimants is identified, over 70 percent of those compensable claimants will seek compensation. CBO reached this

conclusion for mesothelioma victims, lung cancer patients with underlying asbestosis, and individuals with impaired asbestosis. S.852 would create a new, well-identified population of compensable lung and other cancer victims under disease Level VI and Level VII. Instead of assuming that over 70 percent of these victims would pursue their claims, CBO assumes that the vast majority (around 90 percent) would not pursue their claims, even though the average compensation exceeds $500,000.

(17) Further, CBO's assumption contradicts the historical experience of previous government trust funds. A recent GAO report reviewed the experience of three previous government trusts for which initial claim estimates were available—Black Lung Program, Radiation Exposure Compensation Program (RECP), and Energy Employees Occupational Illness Compensation Program (EEOICP). In all cases, the number of claims brought against the trust and paid by the trust exceeded the initial estimates. The underlying theme is that marginal claimants, such as lung and other cancer patients who qualify under Level VI and Level VII of S.852, rarely file in the tort system, but will show up in spades once the path to compensation is clearly demarcated by a government trust fund.

(18) Specifically, recruiters historically did not target lung and other cancer claimants because they are costly to recruit, their cases are hard to win, and there are limited trial dates. Unlike non-malignant claimants, lung and other cancer patients are very costly to recruit since recruiting a large number of cancer patients at union halls or work sites is not possible. Further, these claims are difficult to win in the tort environment because lung and other cancers lack the strong epidemiological link that mesothelioma and asbestosis have to asbestos. Other factors, such as smoking, are much more important risk factors for these cancers. For example, a jury is not likely to award a large asbestos claim to a smoker with lung cancer. More importantly, given the limited trial dates, plaintiffs' attorneys would rather try stronger mesothelioma and asbestosis cases.

(19) Lung and other cancer claimants can potentially file with the Manville Trust and other bankruptcy trusts to collect compensation; however, this compensation would amount to only several thousand dollars. This is not sufficient to make their recruitment economically profitable. In contrast, lung and other cancer claimants are entitled to hundreds of thousands of dollars under the FAIR Act and hence are much more likely to file claims even without plaintiffs' attorneys recruiting them. In fact, under the FAIR Act, Level VI and Level

VII claimants are more likely to file claims with the help of hospitals than attorneys. After all, according to the CBO many of these individuals will be receiving medical monitoring under disease Level I.

3. CBO excludes expenditure categories

(20) The CBO "cost" estimate excludes several key expenditure categories that increase the cost of the FAIR Act by more than $50 billion, even under the best circumstances. In particular, the CBO "cost" estimate assigns zero cost to the following expenditure categories:

- Family members of qualifying workers
- Dormant claims that are still pending in the tort system
- Borrowing costs
- Residents of Libby, Montana and other similar areas
- Individuals who qualify via a CT scan

CBO acknowledges these costs exist, openly admits it excludes these costs, and yet persists to represent its range for the full cost of the Fund as $120 billion to $150 billion. Clearly CBO's approach is not appropriate in a report that portrays itself as a "cost" estimate of the FAIR Act, as it assigns zero cost to these risk factors.

(21) The CBO repeatedly emphasizes that its "cost" estimate not only excludes the above expenditure categories, but also excludes potential savings, leaving the reader with the impression that the unknown savings may offset the excluded costs. However, these potential savings are an order of magnitude less than the potential costs of the CBO's excluded expenditure categories. Specifically, CBO cites that the Act requires the Institute of Medicine of the National Academy of Sciences to conduct a study to examine the causal link between asbestos exposure and cancers other than mesothelioma and lung cancer. CBO forecasts less than $4 billion in costs for other cancer claims, whereas the excluded costs are at least $50 billion.

3.1. Family members of qualifying workers

(22) CBO excludes take-home exposure claims from its "cost" estimate. Bates White showed that S.852 would create an entitlement of approximately $45 billion for the spouses of occupationally exposed workers. Including additional household members, such as children,

would further increase the entitlement. Even if only 50 percent of these qualified individuals pursued their claim, then incorporating take-home exposure claims into the CBO cost estimate would increase expenditures by more than $20 billion.

3.2. Dormant claims that are still pending in the tort system

(23) CBO excludes dormant tort claims from its "cost" estimate. Bates White showed that S.852 would create an entitlement of approximately $25 billion for dormant tort claims. Plaintiff attorneys note that they have an ethical obligation to review their records and file any dormant tort claims that are eligible for compensation under S.852. Thus, it is unreasonable to assume that none of these individuals will file claims against the Fund. Even if only half of these individuals pursued their claims, the expenditures of the Fund would increase $12.5 billion. Further, these claims would be filed in the first few years of the Fund, increasing the amount of borrowing by the Fund and the resultant interest payments.

3.3. Borrowing costs

(24) CBO excludes borrowing costs from its "cost" estimate. There is broad agreement that the expenditures under S.852 are front-loaded relative to the revenues. In its August 25, 2005 report on the FAIR Act, the CBO itself explicitly estimates that "if the value of valid claims totaled $130 billion, interest costs on the fund's borrowing might amount to $10 billion."[2] CBO reaffirms the $10 billion borrowing cost estimate in its February 1, 2006 response to questions from Senator Biden. Other experts forecast substantially higher borrowing costs. For example, Dr. Mark Peterson states that the borrowing costs could exceed $50 billion.

3.4. Residents of Libby, Montana and other similar areas

(25) CBO excludes claims for residents of Libby, Montana and other similar areas from its "cost" estimate. Many of the potential vermiculite sites have large populations. In total, more than 30 million individuals resided in the metropolitan areas surrounding the vermiculate sites in 1970. We are not aware of any studies that provide an actual assessment of the costs that

[2] CBO December 19, 2005 letter to Chairmen Specter page 15

would be associated with these potential vermiculite sites. However, because of the combination of population size of these locals, background cancer incidence rates, and the payment levels specified in the trust, the costs could be substantial.

(26) Specifically, S.852 proposes that claimants who lived for one year or more near potential vermiculite sites receive special consideration along two dimensions. First, claimants who would otherwise receive Level II compensation ($25,000) or Level III compensation ($100,000) are entitled to Level IV compensation ($400,000). This changes amounts by a four- to sixteen-fold increase in compensation for 90 percent of non-malignant claims from these areas. Second, the Significant Occupational Exposure (SOE) criteria are waived, which increase the number of people who will qualify for compensation.

3.5. Individuals who qualify via a CT scan

(27) CBO excludes the additional claimants who will qualify via a CT scan from its "cost" estimate. The FAIR Act explicitly permits the use of CT scans as a diagnostic tool of bilateral pleural disease. Historically, most physicians used X-rays to diagnose pleural conditions. The basis for the CBO forecast is the prevalence of bilateral pleural disease as diagnosed by X-ray evidence and recorded in the Manville database. CT scans are more sensitive and, therefore, capable of detecting bilateral pleural disease that X-rays miss. Thus, the allowance for CT scans will increase the number of claims and the cost of the Fund.

4. CBO's confusion over Bates White's methods

(28) The CBO letter to Chairman Specter dated December 19, 2005 makes two false assertions concerning the Bates White analysis. First, CBO errantly asserts that Bates White assumes that the Significant Occupational Exposure (SOE) criteria would not constrain potential claimants. CBO confuses the average duration of exposure on a given job with the average duration of exposure over an individual's career. Although the majority of jobs last less than three years, the typical career exceeds 20 years. Due to this confusion, CBO erroneously concludes that the SOE criteria would eliminate a significant portion of otherwise qualified claimants. Further, CBO ignores the five discrete steps Bates White takes to ensure that we include only individuals who would satisfy the SOE criteria.

(29) Second, CBO errantly asserts that the Bates White estimate of the prevalence of pleural abnormalities exceeds that of other experts. CBO relies on the analysis of NERA to reach this conclusion. NERA is wrong when it claims that it corrected the biases in the medical articles we reviewed. What NERA has done is to correct only for the biases that cause the studies to overestimate the prevalence of pleural abnormalities; NERA does not correct for the other, perhaps more important, biases that cause the studies to underestimate the prevalence of pleural abnormalities. More importantly, other experts' forecasts, and the CBO forecast, of the number of non-malignant claims with pleural abnormalities confirm the Bates White estimate of the prevalence of pleural abnormalities.

4.1. Significant Occupational Exposure criteria

(30) CBO makes two errors concerning the SOE criteria. First, CBO (and NERA) confuses the average duration of exposure on a given job with the average duration of exposure over an individual's career. Due to this confusion, CBO erroneously concludes that the SOE criteria would eliminate a significant portion of otherwise qualified claimants. Although the majority of jobs last less than three years, the typical career exceeds 20 years. Using Manville exposure records as a proxy for potential claimants' asbestos-related careers, over 90 percent of lung and other cancer patients with pleural abnormalities satisfy the SOE criteria.

(31) Second, CBO mistakenly claims that Bates White did not take these criteria into account. In reality, the Bates White approach explicitly accounts for the SOE criteria. We expect the vast majority of workers that we identify as satisfying the medical criteria for compensation under Levels VI, VII, and VIII of the Fund also will meet the SOE criteria. Over 80 percent of the entitlement for Level VI and Level VII correspond to workers with high to medium exposure. S.852 credits most of these workers with four and two weighted years of exposure for each year worked, respectively. Therefore, prior to 1976 workers in occupations that receive four weighted years for each calendar year require only three years of employment to qualify for lung cancer and four years to qualify for other cancers. Similarly, workers in occupations that receive two weighted years for each calendar year require six and seven and a half years respectively. In the context of a working career, these are very low duration requirements.

(32) Further, the SOE criteria exclude very few individuals who satisfy the medical criteria because duration of exposure is highly correlated to the presence of pleural abnormalities. People who did not work in asbestos-exposed occupations for an extended period of time are not likely to develop pleural abnormalities. Therefore, a vast majority of Level VI and VII claimants who have lung and other cancers with pleural abnormalities will satisfy the SOE criteria.

(33) This fact is supported by the medical literature as well as past claims data. Medical research has repeatedly reaffirmed the strong correlation between the duration of exposure and the prevalence of pleural abnormalities. For example, Dr. Nicholson used the prevalence of pleural abnormalities in an occupational group to infer the amount of asbestos exposure those workers experienced. More recently, Baker, et al. (1985), for example, found that sheet metal workers with 10 or fewer years in the trade had dramatically lower prevalence of bilateral pleural abnormalities (6.3 percent) than those with more than 30 years of experience (70 percent).[3] Similarly, Fischbein et al. (1992) examined millwright and machinery erectors and found that the prevalence of bilateral pleural abnormalities increase from around three percent for workers with less than 10 years tenure to over 50 percent in workers with employment of 20 years or more.[4]

(34) In addition to the medical literature, historical claims data also indicate that the vast majority of lung and other cancer claimants with pleural abnormalities will meet the SOE criteria. In particular, using Manville exposure records as a proxy for potential claimants' work histories, over 90 percent of lung and other cancer patients with pleural abnormalities will satisfy the SOE criteria.

(35) Finally, our calculation of the total entitlement excludes the small number of lung and other cancer patients who would not satisfy the SOE criteria. We do this by understating the

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[3] Baker et al. (1985) "Respiratory illness in the construction trades", Journal of Occupational Medicine, Vol. 27, no 7.

[4] Fischbein et al. (1993) "Respiratory finding among millwright and machinery erectors: identification of health hazards from asbestos in place at work", Environmental Research, vol 61, 25-35.

number of lung and other cancer patients with pleural abnormalities by more than enough to offset the impact of the SOE criteria. In particular, we drop short-tenured workers, understate the number of long-tenured workers, decrease the prevalence of pleural abnormalities for more recent birth cohorts, exclude all individuals born after 1958, and eliminate the 10.9 million workers in the low-end of the low exposure group.

(36) A significant number of the workers we exclude are likely to meet the SOE criteria. For example, an insulator born in 1959 and who began work in 1977 would need only six years of employment to meet the SOE criteria for Level VII lung cancer. Manville data contain well over a thousand claimants who were born after 1958, most of whom would meet the SOE criteria, but are excluded from our analysis. Seventy of these Manville claimants born after 1958 have mesothelioma, demonstrating potentially significant asbestos exposure to individuals we exclude from our estimate.

4.2. Prevalence of pleural abnormalities

(37) CBO states that Bates White may have overestimated the incidence of pleural abnormalities. This assertion is demonstrably false. Other experts' forecasts, and the CBO forecast, of the number of non-malignant claims with pleural abnormalities confirm the Bates White estimate of the prevalence of pleural abnormalities. Further, CBO relies on the faulty analysis of NERA in making its assertion that Bates White overestimates the prevalence of pleural abnormalities. NERA is wrong when it claims that it corrected the biases in the medical articles we reviewed. What NERA has done is to correct only for the biases that cause the studies to overestimate the prevalence of pleural abnormalities; NERA does not correct for the other, perhaps more important, biases that cause the studies to underestimate the prevalence of pleural abnormalities.

4.2.1 Non-malignant claim forecasts support Bates White analysis

(38) The number of non-malignant claims forecasted necessitates a range for bilateral pleural abnormalities consistent with our range of 10 percent to 25 percent. NERA's contention that the true prevalence of bilateral pleural disease is five percent contradicts the forecasts of

non-malignant claims by CBO, the forecast of other experts, and the claims experience of the Manville Trust.

(39) CBO and other experts (presumably Goldman Sachs, Navigant, and LAS) all forecast that about 1.5 million individuals will receive compensation for non-malignant conditions. According to these forecasts, all of these claimants have bilateral pleural disease and five or more years of exposure. Further, the vast majority of these individuals will receive medical monitoring under disease Level I.

(40) These forecasts consider the exposed population as quantified by Dr. Nicholson in his 1982 paper. Dr. Nicholson estimates that 10.6 million exposed workers remain alive in 2000. In order for 1.5 million individuals out of a population of 10.6 million to receive compensation for a bilateral pleural disease, the prevalence of bilateral pleural disease among that population must be at least 14 percent (1.5 million divided by 10.6 million). If the propensity to file a non-malignant claim among this population were 50 percent, then the prevalence of bilateral pleural disease would have to be 28 percent. For the traditional Nicholson population, Bates White used a prevalence of 24 percent. This prevalence is consistent with the prevalence used in the other forecasts and would be exactly the same assuming a 60 percent filing rate for non-malignant claimants.

(41) Despite the fact that every forecast of the number of non-malignant claims uses a double-digit prevalence of bilateral pleural disease, NERA contends that Bates White should use five percent. This contention contradicts the forecasts of non-malignant claims by CBO and other experts. Further, NERA's contention contradicts the claims experience of the Manville Trust. According to NERA's contention, 530,000 people will develop bilateral pleural disease (five percent of the 10.6 million individuals with asbestos exposure). More than that many non-malignant claims already have been filed against the Manville Trust.

4.2.2 Biases in studies of pleural abnormalities

(42) Every study of the prevalence of pleural abnormalities is subject to one set of biases that may cause it to overstate prevalence and a second set of biases that may cause it to understate prevalence. Neither the positive nor negative biases can be quantified precisely. In lieu of attempting to correct for all of these biases, we opted to specify a range for the likely

prevalence of pleural abnormalities. That range is consistent with the medical literature. It conforms to Dr. Nicholson's (1982) estimates for the medium and high exposure occupations. For comparison, Nicholson calculated the prevalence of pleural abnormalities to be 56 percent for installation workers with tenure of at least 20 years, 54 percent for shipbuilding and repair workers, and 44 percent for workers in chemical plant and refinery maintenance. The prevalence of pleural abnormalities in other occupations scales down proportionately from these values depending on their relative exposure levels. Finally, the range is supported by the Manville audit data.

(43) In contrast, the "corrected" prevalence rates provided NERA contradict both Dr. Nicholson's estimates and the Manville audit data. These contradictions exist because NERA chose to correct only for the set of biases that cause the studies to overstate the prevalence of pleural abnormalities and ignored the other, perhaps more important biases that cause the studies to understate the prevalence of pleural abnormalities.

(44) Specifically, there are several biases in the studies that cause them to underestimate the prevalence of pleural abnormalities. First, most of the studies were conducted on relatively young workers. Since the development of pleural abnormalities has a long latency period, their prevalence in a population increases as that population ages. Therefore, we expect the prevalence of pleural abnormalities in the FAIR Act candidate population to be higher than indicated in the studies. Second, most of the studies use X-rays as their diagnostic tool. However, recent medical literature shows that X-rays are not able to detect the presence of all pleural abnormalities and that CT scans are more accurate. The FAIR Act allows the use of CT scans as a diagnostic tool. Therefore, we expect the diagnosis rate in the candidate population to be higher than indicated in the studies.