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# ALABAMA COURT OF CIVIL APPEALS

SPECIAL TERM, 2008

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ArvinMeritor, Inc.

v.

Curtis Dale Johnson

Appeal from Fayette Circuit Court  
(CV-03-142)

THOMAS, Judge.

ArvinMeritor, Inc. ("Arvin"), appeals from a judgment of the Fayette Circuit Court determining that Curtis Dale Johnson is permanently and totally disabled as a consequence of an

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occupational disease and awarding him workers' compensation benefits accordingly. We reverse.

#### Procedural History

On November 17, 2003, Johnson, along with several hundred other plaintiffs, filed a complaint in the Fayette Circuit Court against Arvin, several individually named former managers of Arvin, and a number of fictitiously named defendants. In their complaint, the plaintiffs alleged that they had each been employed by Arvin and that, as a result of that employment, they had sustained injury by way of exposure to toxic and dangerous chemicals. The plaintiffs asserted claims based on workers' compensation, co-employee liability, misrepresentation, suppression, and deceit. Arvin removed the case to the United States District Court for the Northern District of Alabama on December 19, 2003. The United States District Court remanded the case to the Fayette Circuit Court on January 9, 2004.

On May 5, 2005, the plaintiffs filed an amended complaint, adding additional plaintiffs and additional counts against a number of third-party defendants who allegedly had designed, manufactured, and distributed the chemicals that

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caused the plaintiffs' alleged injuries. The additional counts alleged negligence and wantonness, violations of the Alabama Extended Manufacturers Liability Doctrine ("AEMLD"), civil conspiracy, and the tort of outrage. Arvin answered the complaint on June 1, 2005.

Arvin and a number of the other defendants filed motions to dismiss or, in the alternative, motions for a summary judgment; Arvin's motion was filed on November 30, 2005. Those motions were denied by order of the circuit court on March 27, 2006. On May 19, 2006, the circuit court granted the plaintiffs' and the third-party defendants' joint motion for separate trials of the workers' compensation claims and the third-party claims.

On June 12, 2006, Johnson moved for an expedited trial, alleging that his condition "had deteriorated to a grave and alarming degree. "On June 29, 2006, the circuit court set Johnson's claim for trial on April 20, 2007. Following a bench trial, the circuit court entered a judgment on July 13, 2007, finding that Johnson was permanently and totally disabled as a result of a compensable occupational disease and awarding him benefits accordingly. On August 24, 2007, Arvin

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timely appealed. On November 30, 2007, the circuit court entered an order certifying its July 13, 2007, judgment as final pursuant to Ala. R. Civ. P. 54(b).

#### Factual Background

Arvin is a manufacturer of mufflers and other automotive exhaust systems whose Fayette, Alabama, plant ceased production in May 2002. Johnson, who was 61 years old at the time of trial, had worked at the Arvin plant in Fayette for nearly 34 years, from July 1968 until April 2002, when he volunteered to take an early layoff because he was having breathing problems. In July 2002, three months after Johnson left the plant, Dr. Charles Nolen diagnosed Johnson as suffering from emphysema, a type of chronic obstructive pulmonary disease ("COPD").

During his 34 years at Arvin, Johnson held a number of jobs at the plant. For his first eight years, he was a general machine operator, working anywhere he was needed. For the next 13 years, he was a butt welder, loading coiled steel and welding the ends together in the tube mill. He spent the next 13 years as a slitter operator, operating the machinery that cut or "slit" 30,000-pound steel coils into the desired

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widths. During his final four months at the plant, Johnson worked as a spot welder on the muffler line.

Johnson described the air quality in the plant as "bad" and "filled with oily smoke." He explained that smoke coming off the welds was exhausted away from the welders' faces by fans, but, he said, the smoke just rose to the ceiling and had nowhere to go from there. He said that "the smoke would start at the top of the plant after a couple hours of production and build down into [the workers'] breathing area -- it didn't get any better the rest of the day." Johnson testified that he had complained to John Gary, the plant human resources manager, about the poor air quality, after which, Johnson said, some "small, ... insignificant [and] definitely inadequate" steps were taken to improve the ventilation in the plant, such as installing additional duct work and fans. Johnson said that soot was a "way of life" at the Arvin plant; he stated that, for the entire time he was at the plant, he cleaned soot from his nose every night after work. Johnson testified that when he left Arvin in April 2002, he was experiencing "extreme shortness of breath," as well as hoarseness every afternoon.

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Johnson acknowledged that he was a long-time cigarette smoker. He testified that he had smoked one and a half to two packs of cigarettes per day for 36 years, from 1963 to 1999. In 1999, he quit smoking for two years. He said that he had started smoking again in 2001, when he heard that the plant would be closing soon, and smoked until 2005. Johnson testified that his wife was also a smoker and that she had recently been diagnosed with lung cancer.

After he left Arvin in April 2002, Johnson was unemployed for 15 months; during that time, he said, he re-roofed and painted his house. Then, on July 23, 2003, Johnson began work at Delta Apparel Company, where his job was to carry large spools of thread, put them into a wheeled buggy, and roll them to the area where they were needed. He worked part of an eight-hour shift and then resigned from his employment at Delta Apparel because, he said, the dust in the plant made his breathing problems so bad that he could not walk across the plant floor without stopping. Johnson subsequently applied for and received Social Security disability benefits. When he was questioned at trial as to the July 23, 2003, date that he had assigned to the onset of his disability in his Social

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Security disability application form, he explained that the day he quit his job at Delta Apparel was the first time he had realized that he would never be able to work again.

Two other Arvin employees testified. Ray Thacker, who had also worked at the Arvin plant for 34 years, testified that he had been an "oiler" -- one who had the responsibility for mixing and handling the chemicals used in the plant. One of his duties was to check the water level of a "pit" into which recirculated water, grease, and sludge from all the plant machinery drained and to add biocides to the water to prevent the growth of bacteria. Thacker said that the plant was housed in a 280,000-square-foot building, which had a 40-foot ceiling. It had had 10 muffler lines with 8 to 10 welders on each line. With the addition of spot welders, there were more than 100 welders in the plant whose actions generated "a lot of smoke and fumes." Thacker described the air in the plant as "smoky, hazy, [with] a lot of stuff flying in the air, sand and dust, fiberglass, [and] basol." Thacker said that, although each welder operated under an exhaust hood or fan, the fans just blew the smoke around and all the employees breathed it. Thacker, who stated that he does not

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suffer from any breathing problems, said that he had seen Johnson and many other employees smoking in the plant.

Charlie Dale Jones spent most of his 35-year history at the Arvin plant working in the tube mill, where coiled steel was formed into tubes. The tubes were then welded, cooled, and sprayed with Hocutt synthetic nonoil, a metalworking lubricant. Jones said the plant was filled with haze and smoke. There were approximately 50 36-inch fans hanging at various points in the plant and 2 larger cross-ventilation fans at the ceiling. One of his job duties was to clean the 36-inch fans to remove the build-up of oil skim and metal particles that accumulated on them. Jones testified that the only employees who wore masks were those who handled the fiberglass insulation for the mufflers. He stated that there was no grinding of fiberglass. Neither Thacker nor Jones knew what were the permissible exposure limits for various substances in use at the plant or whether those limits had ever been exceeded. Nor did they know what were the air-quality limits established by the Occupational Safety and Health Administration ("OSHA") or whether the plant had ever exceeded those limits. Jones, who was not a smoker, testified

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that he suffered from bronchiectasis and had had part of a lung removed in 1990.

Lori Andrews, a civil engineer with a master's degree in occupational safety and health, testified by video deposition as an expert witness for Johnson. Andrews stated that, based on her training and experience, she was familiar with the health risks associated with heavy-metal fabricating plants such as Arvin's Fayette plant. She testified that she has worked with numerous industrial clients to analyze workplace health and safety issues and to provide air-monitoring programs. In addition, she has written several textbooks and has taught occupational-health-and-safety-related courses since 1979.

Andrews stated that in preparing to testify in this case she had received from Arvin and reviewed a "Master Chemical List" for every raw material and chemical substance used in the plant. She had also reviewed the Material Safety Data Sheets ("MSDS") applicable to those materials and substances. In addition, Andrews had reviewed testimony admitted in the companion case of ArvinMeritor, Inc. v. Handley, [Ms. 2050951, June 27, 2008] \_\_\_ So. 2d \_\_\_ (Ala. Civ. App. 2008),

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specifically the testimony of Johnson's co-employees, Thacker and Jones. Thacker and Jones had provided an overview of plant operations, outlined the job duties of various positions in the plant, specified the raw materials and chemical substances to which the employees holding those positions were likely to have been exposed, and described the air-quality environment in the plant. Finally, Andrews relied on information she had gleaned from a 2004 visit to the plant.

Andrews testified that she had written MSDS documents and that she routinely used them in her work. She stated that employers like Arvin are required by federal law to keep, post, and provide their employees with training on how to read and understand the MSDS documents for the materials used in their plants. Andrews said that an MSDS must include the product manufacturer's name, address, and telephone number, a list of hazardous ingredients in the product, and the threshold-limit value or permissible exposure limit for each product. Andrews stated that threshold-limit values were "authored and established through the American Conference of Governmental Industrial Hygienists." She explained that in 1972 threshold-limit values were adopted, under the name

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"permissible exposure limits" (hereinafter referred to as "PELs") by OSHA. Under either nomenclature, the limit refers to a unit of measurement: if the substance being measured is a solid, it is expressed as milligrams per cubic meter; if the substance is a liquid, it is expressed in milligrams per liter or parts per million, either by volume or by weight. Andrews further explained that the PEL is "a time-weighted average over a shift of operation established for a 40-hour work week for a 40-year period." According to Andrews, an MSDS must also include the health risks associated with the product, including the route of entry into the body and the symptoms of overexposure to the product.

The bulk of Andrews's testimony consisted of her reading and explaining the information contained on several MSDS documents pertaining to raw materials and chemical substances used in the Fayette plant. For example, MSDS documents for steel and steel-alloy products included the following statement: "When product is subjected to welding, burning, melting, sawing, brazing, grinding, and other similar processes, potentially hazardous airborne particulate fumes may be generated." Andrews stated that the MSDS for aluminum

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indicated that "inhalation of finely divided aluminum and aluminum oxide powder has been reported as a cause of pulmonary fibrosis and lung damage." The MSDS for cobalt indicated that

"[c]obalt dust may cause an asthma-like disease with symptoms ranging from cough, shortness of breath, and dyspnea to decreased pulmonary function, nodular fibrosis, permanent disability, and death. Exposure to cobalt may cause ... respiratory hypersensitivity."

Andrews noted that the MSDS documents for some of the products used in the plant, such as sodium hydroxide (lye) and glycol, a surfactant, indicated that there were "no known chronic health effects."

Ultimately, Andrews rendered three opinions:

1. that there were "inhalation exposures occurring at [the Arvin plant],"
2. that Arvin's employees "were at a higher risk of potential exposure than those of people found in general employment," and
3. "that the metals, the metal emissions, fumes, [and] chemicals ... utilized [in the Arvin plant] aggravated or contributed to worker health issues."

On cross-examination, Andrews acknowledged that she had seen no data indicating that the PEL for any product listed on the Arvin MSDS documents had ever been exceeded at the Fayette

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plant. She admitted that she had not seen the results of any air-quality or water-quality tests that may have been performed at the plant and that she did not know whether OSHA had ever cited the plant for noncompliance with health or safety standards. She conceded that she did not know whether any test had revealed the presence in Johnson's body of any hazardous substance identified in an MSDS. She acknowledged that she had never observed the plant in operation and that her 2004 visit had occurred two years after the plant had shut down and all the equipment except for the exhaust fans had been removed. Andrews did not calculate the capacity of the fans. Finally, Andrews answered the following questions:

"Q. [By Arvin's counsel] Do you know what a dose-response relationship is?

"A. Yes, I do.

"Q. What is a dose-response relationship?

"A. A dose-response relationship is something that you have to have a certain exposure for a certain response except for carcinogens, and that's a whole different discussion.

". . . .

Q. Do you know [what] dose of any particular chemical anyone in the plant received?

"A. No, I do not."

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Dr. Allan Goldstein, a board-certified pulmonologist, testified by deposition as an expert witness for Arvin. Dr. Goldstein stated that in formulating an opinion as to the cause of Johnson's emphysema, he took an extensive history from Johnson, reviewed Johnson's medical records and Social Security disability claim, physically examined Johnson, and performed the following tests: a chest X-ray, complete pulmonary-function tests, a resting blood-gas test, and an electrocardiogram.

The history that Dr. Goldstein obtained from Johnson indicated that Johnson had been exposed to welding dust, smoke, steam lubricants, and scrubbing solutions at the Arvin plant. Johnson began experiencing breathing problems in 2000; his problems became progressively worse and did not improve on weekends, vacations, or other times when he was away from work. Johnson told Dr. Goldstein that he had suffered from asthma as child but that his symptoms had disappeared when he was about 20 years old. Johnson informed Dr. Goldstein that he had smoked one and a half packs of cigarettes per day for 30 years -- an amount that, Dr. Goldstein said, was equivalent to "45 pack-years" -- then Johnson quit smoking for 2 years

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but resumed smoking again and smoked 2 packs per day for 4 more years -- the equivalent, according to Dr. Goldstein, of "8 pack-years."

Dr. Goldstein testified that Johnson's chest X-ray revealed that his lungs were hyperinflated, a condition that, Dr. Goldstein said, was consistent with emphysema, but that there were no pleural changes. Dr. Goldstein stated that the pulmonary-function test results were consistent with moderate to severe airway obstruction and that the blood-gas test result was slightly abnormal, indicating a reading of 76, with 80 being normal.

Dr. Goldstein explained that in determining the causation of a patient's pulmonary disease, he assumes that the patient has a work-related lung disease until he "talks himself out of it." He stated that he began with that assumption in Johnson's case but that he talked himself out of it because of Johnson's "[s]trong, strong smoking history" and because of the fact that Johnson's symptoms did not improve when he was away from work. Dr. Goldstein testified, "If [Johnson's lung disease] were related to chemicals, you'd expect the history of getting worse at work, better on the weekends or on

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vacation." In addition, he said that if Johnson's lung problems were related to metal dusts, he would have expected to find abnormalities on the chest X-ray, but he found none. Further, Dr. Goldstein observed, "I don't know how much [dust, smoke, or chemicals in the plant] he was exposed to because, obviously ... there are safe levels of certain things." Dr. Goldstein testified that the most common cause of emphysema is smoking, and he stated that there was nothing in Johnson's history that would allow him to conclude that exposure to chemicals at work contributed to cause Johnson's disability.

Dr. Janice Hudson, a family-practice physician in Fayette, testified as an expert for Johnson on the issue of medical causation. The record indicates that, before she testified, she had viewed the video deposition of Lori Andrews, Johnson's occupational-safety-and-health specialist, and had heard the trial testimony of Johnson and his co-employees, Thacker and Jones. Dr. Hudson testified that in reaching an opinion as to the cause of Johnson's lung disease she had reviewed Johnson's medical records, taken a history, and performed a physical examination of Johnson. In addition, she had conducted blood-gas, pulmonary-function, and walking-

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treadmill tests on Johnson. Dr. Hudson noted that Johnson had a barrel chest, a pink face, and pursed his lips when he talked, all characteristic, she said, of COPD sufferers. Hudson testified that Johnson's pulmonary-function tests demonstrated that his lungs were "very obstructed." On the forced-vital-capacity portion of the test, Johnson performed at a level that was 65% of what was expected of a man his age; on the forced-expiratory-volume portion of the test, he performed at 53% of what was expected. Dr. Hudson stated that Johnson's exercise-desaturation rate on the walking-treadmill test was 87%, and, she explained, a score of 89% entitles a patient to oxygen under Medicare regulations. Dr. Hudson testified that she ordered oxygen for Johnson.

Dr. Hudson concluded that Johnson was suffering from "COPD, more of the emphysema type." She further opined that Johnson's condition would not improve in the future, that he would experience a progressive decline, and that he was permanently and totally disabled. She said that she was aware of Johnson's smoking history and that she knew that smoking could cause COPD, but, she said, smoking was not the only risk factor for COPD. She testified that, based on Andrews's video

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deposition and the live testimony she had heard from Johnson and his two co-employees, Thacker and Jones, she believed that Johnson's "occupational exposure ... certainly has contributed to his illness." Specifically, she stated that the respiratory hazards enumerated on the MSDS documents relating to steel, cobalt, and Hocutt nonoil led her to conclude that Johnson's exposure to those products "could have contributed to cause his COPD."

On cross-examination, Dr. Hudson acknowledged that she had performed no tests on Johnson that revealed the presence of steel or cobalt in his lungs and that she was not aware of any such tests that had been performed by any another medical provider. She stated that she did not know whether a blood test would have revealed the presence of cobalt. She admitted that she had not reviewed Dr. Goldstein's report or deposition testimony, that she had no test data about the air quality at the Fayette plant, and that she had no information regarding the extent of Johnson's exposure to hazardous substances in the plant. Finally, Dr. Hudson agreed that there were "no actual test results" that supported her opinion that Johnson's

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employment at the Arvin plant had contributed to cause his emphysema.

Ted Wells, an industrial engineer, testified that he was the former worldwide environmental director for Arvin. His job duties required that he travel to all the Arvin plants to ensure that they were in compliance with environmental regulations. He said that Arvin's customers required that the products they purchased from Arvin be certified by the International Standards Organization ("ISO"). Wells developed a program, the Arvin Environmental Management System ("AEMS"), to ensure that Arvin plants complied with ISO requirements; he visited the Fayette plant in 1997 to implement that program, and, he said, the Fayette plant received AEMS certification in January 1999. Wells said that he revisited the Fayette plant twice a year for announced follow-up audits. Wells stated that the Alabama Department of Environmental Management ("ADEM") had inspected the plant and had found no problems with air quality. He did not specify the date of the ADEM inspection. Wells testified that Arvin monitors the occupational health of its employees, and, he said, in the course of that monitoring Arvin had not found "any elevated

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risk of COPD, industrial asthma, chronic bronchitis, or emphysema for employees working in muffler-assembly plants such as Fayette."

John Gary, who had been the human resources manager of the Fayette plant for 35 years when the plant closed in 2002, testified that Johnson had received training with respect to interpreting MSDS documents and knew the injury-reporting procedure at the plant. Gary stated that Johnson had never reported a lung injury or a breathing problem while he was employed at the Arvin plant. Gary testified that Safe State, a University of Alabama industrial-hygiene program under the auspices of OSHA, had evaluated the plant in 1987 with respect to employee exposure to three potential health risks: metal fumes; total dust; and dust, fiberglass, and airborne fibers. Safe State concluded that, in all three areas, employee exposures were within acceptable limits according to OSHA regulations. Gary said the plant had never been cited by OSHA for an air-quality violation. Gary also said that Arvin had hired a retired OSHA inspector as a consultant to make periodic air-quality inspections of the plant. Gary did not specify the time period during which the consultant had

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inspected the plant. Gary testified that there had been only one respiratory injury recorded in the OSHA logs for the Fayette plant and that that injury had resulted in one day's lost time from work in 1991.

Arvin raises the following issues on appeal: (1) that the circuit court erred by admitting the testimony of Johnson's two expert witnesses; (2) that the circuit court's findings with respect to legal causation, medical causation, and the date of Johnson's disability are not supported by substantial evidence; (2) that Johnson is not entitled to reimbursement of medical payments under § 25-5-77, Ala. Code 1975; (3) that Arvin was not the party in whose employment Johnson was "last exposed to the hazards of [an occupational] disease" as required by § 25-5-116, Ala. Code 1975; and (5) that, by affirming the circuit court's order, this court would be violating public policy by sanctioning a "smoker's retirement plan."

#### Standard of Review

Our review of this case is governed by the Workers' Compensation Act, § 25-5-1 et seq., Ala. Code 1975, which states, in pertinent part: "In reviewing the standard of proof

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... and other legal issues, review by the Court of Civil Appeals shall be without a presumption of correctness." § 25-5-81(e)(1), Ala. Code 1975. See also Ex parte Trinity Indus., Inc., 680 So. 2d 262, 268 (Ala. 1996). "In reviewing pure findings of fact, the finding of the circuit court shall not be reversed if that finding is supported by substantial evidence." § 25-5-81(e)(2), Ala. Code 1975. Substantial evidence is "'evidence of such weight and quality that fair-minded persons in the exercise of impartial judgment can reasonably infer the existence of the fact sought to be proved.'" Ex parte Trinity Indus., 680 So. 2d at 268 (quoting West v. Founders Life Assurance Co. of Florida, 547 So. 2d 870, 871 (Ala. 1989), and citing § 12-21-12(d), Ala. Code 1975).

#### Admissibility of the Testimony of Johnson's Experts

Generally, the question whether a witness is qualified as an expert is left largely to the discretion of the trial court, and that court's decision will not be disturbed unless the court has exceeded the limits of its discretion. See Knapp v. Wilkins, 786 So. 2d 457 (Ala. 2000).

""The standard of review applicable to whether an expert should be permitted to testify is well

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settled. The matter is 'largely discretionary with the trial court, and that court's judgment will not be disturbed absent an abuse of discretion.' Hannah v. Gregg, Bland & Berry, Inc., 840 So. 2d 839, 850 (Ala. 2002). We now refer to that standard as a trial court's 'exceeding its discretion.' ... However, the standard itself has not changed."'"

Millry Mill Co. v. Manuel, [Ms. 2060267, March 7, 2008] \_\_\_ So. 2d \_\_\_, \_\_\_ (Ala. Civ. App. 2008) (quoting Prowell v. Children's Hosp. of Alabama, 949 So. 2d 117, 130 (Ala. 2006), quoting in turn Kyser v. Harrison, 908 So. 2d 914, 918 (Ala. 2005)).

Before trial, Arvin filed a motion in limine to exclude the testimony of Johnson's two expert witnesses -- Lori Andrews, an occupational-safety-and-health specialist, and Dr. Janice Hudson, a family-practice physician. The circuit court denied Arvin's motion and admitted the testimony of both witnesses.

"An appellant who suffers an adverse ruling on a motion to exclude evidence, made in limine, preserves this adverse ruling for post-judgment and appellate review only if he objects to the introduction of the proffered evidence and assigns specific grounds therefor at the time of the trial, unless he has obtained the express acquiescence of the trial court that subsequent objection to evidence when it is proffered at trial and assignment of grounds therefor are not necessary."

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Owens-Corning Fiberglass Corp. v. James, 646 So. 2d 669, 673 (Ala. 1994) (citing Liberty Nat'l Life Ins. Co. v. Beasley, 466 So. 2d 935 (Ala. 1985)).

Lori Andrews's Testimony

Andrews offered three opinions, namely: (1) that there were "inhalation exposures occurring" at the Arvin plant; (2) that Arvin's employees "were at a higher risk of potential exposure than those of people found in general employment"; and (3) that such exposures "aggravated or contributed to worker health issues." At trial, Arvin timely objected to the introduction of Andrews's opinions and assigned specific grounds therefor.

On appeal, Arvin correctly points out that Andrews had seen no data with respect to whether the PELs for any raw material or chemical substance used in the plant had ever been exceeded; that Andrews had performed no air-quality, water-quality, or inhalation-exposure testing; that Andrews had never seen the plant in operation; and that Andrews's opinions concerning the exposure to hazardous substances by Arvin employees in the Fayette plant were based upon the testimony of Johnson and two former co-employees, Thacker and Jones, who

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were, themselves, unaware of the PELs for various substances in use at the plant, the air-quality limits established by OSHA, and whether the plant had ever exceeded those limits.

Arvin asserts that Andrews's own testimony established that the generally accepted scientific method for assessing the risk of an employee's exposure to a hazardous substance is to determine whether the PEL for the substance was exceeded. Because Andrews failed to provide any evidence concerning the level of exposure that Johnson or any other employee at the plant experienced with respect to any substance, Arvin argues that Andrews's testimony failed to satisfy the test announced in Frye v. United States, 293 F. 1013 (D.C. Cir. 1923), for the admissibility of scientific evidence.<sup>1</sup> Under the Frye standard,

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<sup>1</sup>Alabama adopted the Frye standard in 1991. See Ex parte Perry, 586 So. 2d 242 (Ala. 1991). Two years later, the United States Supreme Court overruled the Frye standard for the admissibility of scientific evidence in federal trials. See Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579, 589 (1993). Alabama courts, however, have not abandoned the Frye "general acceptance test" and have not adopted the Daubert standard in civil cases. See Bagley v. Mazda Motor Corp., 864 So. 2d 301, 310 (Ala. 2003). The Daubert standard applies by statute in Alabama only to the admissibility of DNA evidence. See § 36-18-30, Ala. Code 1975.

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"a person who offers an opinion as a scientific expert must prove that he relied on scientific principles, methods, or procedures that have gained general acceptance in the field in which the expert is testifying."

Slay v. Keller Indus., Inc., 823 So. 2d 623, 626 (Ala. 2001).

We hold that the first of Andrews's three opinions -- that there were "inhalation exposures occurring" at the Arvin plant, was not governed by the Frye test because it was not grounded upon a scientific principle, method, or procedure. Andrews's first "opinion" was actually not an opinion at all; it was a fact. At trial, there was no dispute that Arvin employees had been exposed to the risk of inhaling dust, fumes, or chemicals as a consequence of being employed in the Fayette plant. Instead, the dispute was whether any inhalation that had occurred was beyond permissible limits, rose to toxic levels, and caused or contributed to Johnson's emphysema/COPD. On that subject, as Arvin points out, Andrews offered no information and no opinion.

Andrews's second opinion -- that Arvin's employees "were at a higher risk of potential exposure than those of people found in general employment" -- was also not subject to the Frye test because it, too, was not dependent upon a scientific

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principle, method, or procedure. Instead, the admissibility of the opinion was governed by Rule 702, Ala. R. Evid., which provides:

"If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise."

Andrews testified that she has worked with numerous industrial clients to analyze workplace health and safety issues and to provide air-monitoring programs. In addition, she has written several textbooks and has taught occupational-health-and-safety-related courses since 1979. We conclude that Andrews was qualified, by virtue of her knowledge, skill, experience, training, and education to render an opinion about the comparative risks of workplace exposure to airborne contaminants. See Southern Energy Homes, Inc. v. Washington, 774 So. 2d 505, 517 (Ala. 2000) (stating that "'[e]xperience and practical knowledge may qualify one to make technical judgments as readily as formal education'" (quoting International Telecomm. Sys. v. State, 359 So. 2d 364, 368 (Ala. 1978))). Thus, Andrews's second opinion was admissible.

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That said, Andrews's second opinion contributed nothing toward meeting Johnson's burden of proof with respect to legal causation. Section 25-5-110(1), Ala. Code 1975, defines an "occupational disease" as

"[a] disease arising out of and in the course of employment, including occupational pneumoconiosis and occupational exposure to radiation as defined in subdivisions (2) and (3), respectively, of this section, which is due to hazards in excess of those ordinarily incident to employment in general and is peculiar to the occupation in which the employee is engaged but without regard to negligence or fault, if any, of the employer. A disease, including, but not limited to, loss of hearing due to noise, shall be deemed an occupational disease only if caused by a hazard recognized as peculiar to a particular trade, process, occupation, or employment as a direct result of exposure, over a period of time, to the normal working conditions of the trade, process, occupation, or employment."

There is no presumption that an employee's disability is the result of an occupational disease; the employee seeking benefits for an occupational disease has the burden of establishing that he is entitled to benefits. § 25-5-120, Ala. Code 1975. In order to satisfy § 25-5-110, the employee must first prove that his disease arose out of and in the course of his employment and that it resulted from exposure over time to the conditions of his employment. The employee must satisfy the two-pronged legal-causation test of § 25-5-

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110(1); he must establish that his disease was caused by hazards that are (1) in excess of those ordinarily incident to employment in general, and (2) peculiar to the occupation in which the employee is engaged. Edmonds Indus. Coatings, Inc. v. Lolley, 893 So. 2d 1197, 1201 (Ala. Civ. App. 2004).

The first prong of the two-pronged legal-causation test for an occupational injury is not satisfied by evidence, such as Andrews's testimony, indicating that the employment increased the employee's risk of exposure to industrial inhalants; instead, it is satisfied by evidence indicating that the occupational exposure increased the risk of contracting the disease from which the employee suffers -- in Johnson's case, emphysema or COPD. See VF Jeanswear v. Taylor, 899 So. 2d 1002 (Ala. Civ. App. 2004); Clark v. Russell Corp., 671 So. 2d 677 (Ala. Civ. App. 1995); and Chrysler Corp. v. Henley, 400 So. 2d 412 (Ala. Civ. App. 1981). Andrews did not testify that Johnson's risk of developing emphysema or COPD was increased by his exposure to inhalants at the Arvin plant.

We are unsure as to the import of Andrews's third opinion -- "that the metals, the metal emissions, fumes, [and]

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chemicals ... utilized [in the plant] aggravated or contributed to worker health issues." At trial, Johnson's counsel assured the circuit court that he was not offering Andrews's testimony to prove medical causation. The following exchange then occurred:

"MR. CARRIGAN [counsel for Arvin]: Your Honor, I would say ... if her testimony is about things that could be an issue, that's different than this is causing a health problem for a particular individual.

". . . .

"MR. FULMER [counsel for Johnson]: She didn't testify to any particular plaintiff. She's testifying as to the conditions at the plant.

"THE COURT: All right.

"MR. FULMER: That exposures exist.

"MR. CARRIGAN: She didn't discuss health data on anyone in the plant. She didn't discuss reviewing OSHA laws to see who is sick. She didn't discuss any kind of mortality rate. She didn't discuss any kind of relative risks. The idea of her testifying to health issues when she did not identify any health data is completely unfounded.

"MR. FULMER: She's not giving any health opinions or data on any one plaintiff.

"THE COURT: All right. This lady has testified that there were problems in this plant with exposure generally, right?

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"MR. CARRIGAN: Yes, sir, that is what she testified.

"THE COURT: Right?

"MR. FULMER: Yes.

"THE COURT: All right. Go ahead. That's the finding of the court."

(Emphasis added.) As the emphasized portions of the foregoing exchange demonstrate, the circuit court stated that it did not interpret Andrews's third opinion as medical-causation testimony. The court's judgment, however, indicates that it considered the testimony to be probative of medical causation. The court's findings of fact stated that

"[Johnson's] occupational health expert, Lori Andrews, testified that [the Arvin plant] processes regarding metals and chemical mixtures resulted in exposures sufficient to aggravate or contribute to cause worker health issues, including those of Mr. Johnson."

(Emphasis added.) To the extent that Andrews's third opinion can be construed to have been probative of the issue of medical causation, it was inadmissible because it did not satisfy the Frye general-acceptance test. As Arvin argues, Andrews's opinion was not based on scientific principles, methods, or procedures that have gained general acceptance in the field of occupational health.

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Andrews testified that the generally accepted safe level of exposure for any of the raw materials and substances in use at the Arvin plant was stated by the PEL adopted by OSHA and noted on the MSDS documents. Nevertheless, Andrews implied that the plant had an unsafe workplace environment despite the absence of data indicating that the PEL for any product in use at the plant had ever been exceeded. She admitted that she had neither seen any air-sampling data from the plant nor conducted any air-quality or ventilation tests of the plant. In fact, she had never seen the plant in operation; her one visit to the plant in 2004 had occurred two years after the plant had shut down and the equipment had been removed. Andrews did not know whether OSHA had ever cited the plant for noncompliance with health or safety standards. She did not know whether any test had revealed the presence in Johnson's body of any hazardous substance identified in an MSDS. She understood the significance of a dose-response relationship, but she was unaware of the dose level of any particular chemical that any employee at the plant may have received.

Andrews stated that in forming her opinion of the health risks in the plant she had relied on testimony about the plant

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environment from Johnson, Thacker, and Jones. The record demonstrates, however, that none of those witnesses were any more aware than Andrews of data that would have supported the thesis that the plant environment was unsafe. Neither Johnson, nor Thacker, nor Jones knew whether the PELs for any raw material or chemical substance had ever been exceeded in the plant or whether the plant had ever been cited for a violation of OSHA air-quality standards. Finally, Andrews did not translate the three employees' anecdotal evidence about the poor air quality in the plant into a conclusion that the PELs for various substances must have been exceeded in order to have produced air quality fitting the employees' descriptions.

All that can be gleaned from Andrews's testimony about the plant environment and the nature of Johnson's workplace exposure to dangerous substances is summed up in Andrews's statement that "inhalation exposures" occurred at the Arvin plant. However, "[a] mere showing of exposure ... will not necessarily compel a finding in favor of [Johnson] on the issue of medical causation." Ex parte Valdez, 636 So. 2d 401, 405 (Ala. 1994). Instead, Johnson was required to show that

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he was exposed to a sufficient amount of hazardous substances "to considerably increase the risk of developing" emphysema/COPD. Id. Even Johnson's appellate brief acknowledges the flaw in Andrews's testimony when it states, "Andrews testified that the chemicals and materials in use at Arvin could provide occupational exposure and negatively impact the health of Arvin workers given sufficient exposure." (Emphasis added).

In Ex parte Valdez, the survivors of an industrial painter who was a cigarette smoker and whose employment had exposed him to coal-tar epoxy sought workers' compensation benefits when the painter died of lung cancer. The Alabama Supreme Court stated that because lung cancer was not a disease indigenous to the painter's workplace environment like byssinosis, see Dan River Mills v. Foshee, 365 So. 2d 1232 (Ala. 1979), or pneumoconiosis, see Black Diamond Coal Mining Co. v. Wilson, 274 Ala. 220, 147 So. 2d 810 (1962), and the painter's lung cancer could have been caused by a nonoccupational factor such as smoking, the plaintiffs bore a higher burden of proof with respect to medical causation; they were required to establish that "the totality of [his] work

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environment ... contributed to cause his cancer and thereby his death." 636 So. 2d at 404. See also 1 Terry A. Moore, Alabama Workers' Compensation § 9:16 at 297 (1998):

"[W]hen the disease is one that may, and often does, arise from nonoccupational factors, such as ... emphysema ... the claimant bears a heavier burden with respect to medical causation. In such cases, the claimant must establish through a totality of the circumstances that the work environment contributed to the acquisition of the disease; mere exposure to stimuli on the job would not establish causation."

The Valdez court explained:

"'[A]t least three factors must be considered when assessing the likelihood that a person was harmed by exposure to an agent.... The first is the existence of a hazard, that is, the potential health effect. The second is the exposure the person received, and the third is the level of risk associated with that exposure.'"

636 So. 2d at 405 (quoting Kenneth R. Foster, David E. Bernstein, and Peter W. Huber, A Scientific Perspective, in Phantom Risk: Scientific Inference and the Law 1, 3 (Kenneth R. Foster et al. eds., 1993)). And, quoting from Professor Larson's treatise, the court stated:

"'Even in the case of unusual chemicals and fumes, however, the quantitative factor cannot be ignored. There should be some evidence of the exposure level necessary to cause increased risk .... Further, as in other types of injury, the injury to a certain

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extent is dose related, with some threshold amount necessary to cause any injury.'" "

Valdez, 636 So. 2d at 405 (quoting Arthur Larson, The Law of Workmen's Compensation § 41.61(c) (1991)). See also Edmonds Indus. Coatings, Inc. v. Lolley, 893 So. 2d at 1206 (affirming an award of benefits for COPD as an occupational disease, despite the fact that the employee was a smoker, because the appellate court concluded that the trial court must have found that the employee's workplace exposure to paint fumes was "sufficient in intensity and duration" to cause or aggravate his COPD).

In summary, we hold that Andrews's first two opinions were admissible over Arvin's Frye objection but that they contributed nothing toward satisfying Johnson's burden of proof with respect to legal causation. With respect to the issue of medical causation, Andrews's third opinion was inadmissible because it did not pass the Frye test. Andrews's third opinion was so vague and incomprehensible that it did not constitute substantial evidence of any element necessary to the establishment of a prima facie case for Johnson.

Dr. Hudson's Testimony

In its motion in limine, Arvin argued that Dr. Hudson's testimony did not satisfy the Frye test. The circuit court denied the motion, and, at trial, Arvin did not restate its objections to Dr. Hudson's testimony. Arvin has therefore failed to preserve this issue for appellate review. See Owens-Corning Fiberglass Corp. v. James, 646 So. 2d at 673.

As we have previously discussed, Andrews's testimony did not constitute substantial evidence of legal causation, a required element of Johnson's prima facie case. See Ex parte Valdez, supra; Edmonds Indus. Coatings, Inc. v. Lolley, supra. We will, therefore, examine Dr. Hudson's testimony to determine whether it constituted substantial evidence of legal causation because, failing that, Johnson did not establish his right to recover workers' compensation benefits for an occupational disease.

Dr. Hudson opined that Johnson's "occupational exposure" had contributed to his illness. She testified that, in arriving at that opinion, she had relied upon Andrews's video deposition as well as the testimony of Johnson, Thacker, and Jones, for an understanding of the nature of Johnson's

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exposure to potentially harmful substances in the Arvin plant. That part of Dr. Hudson's opinion that was based on a conclusion as to the nature of Johnson's "occupational exposure" was, therefore, by her own admission, derived from the testimony of others, none of whom provided any information with respect to the level of Johnson's exposure.

Generally, a physician's opinion is not subject to the Frye test because it is "opinion testimony, not scientific evidence, and thus [it does] not have to meet the admissibility requirements for scientific evidence." Minor v. State, 914 So. 2d 372, 402 (Ala. Crim. App. 2004). A physician's opinion with respect to medical causation is generally not governed by the Frye standard because for many, if not most, diseases, science has not yet clearly established causation and there is no generally accepted procedure to determine conclusively the etiology of the disease. In such cases, the physician's opinion as to causation is as much an "art" as a science, based on factors not readily quantifiable and derived, instead, from the witness's overall experience, skill, and training as a physician. See Bragg v. State, 134 Ala. 165, 174, 32 So. 767, 770 (1902) (stating that medicine

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is "a science or art, comprehending not only therapeutics, but the art of understanding the nature of diseases, the causes that produce them, as well as the art of knowing how to prevent them"). Accordingly, Rule 702, Ala. R. Evid., generally states the standard by which the admissibility of a physician's opinion is judged. See Courtaulds Fibers, Inc. v. Long, 779 So. 2d 198, 202 (Ala. 2000) (holding that a veterinarian's testimony regarding the cause of death of horses was derived from the veterinarian's knowledge, skill, and expertise and was not subject to the Frye standard); Millry Mill Co., \_\_\_ So. 2d at \_\_\_ (holding that physicians' testimony as to the cause of employee's neck injury was not subject to the Frye standard).

When, however, a physician addresses a topic about which there is a generally accepted method or procedure for assessing the facts, then the physician's testimony addressed to that topic is governed by Frye. See Kimberly-Clark Corp. v. Sawyer, 901 So. 2d 738 (Ala. Civ. App. 2004) (holding, in a workers' compensation case, that a doctor's report assessing only three of six factors included in a generally accepted diagnostic standard for asbestosis did not meet the

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Frye standard and was, therefore, inadmissible). See also United States Sugar Corp. v. Henson, 823 So. 2d 104 (Fla. 2002) (applying, in a case of first impression on a certified question from a lower Florida court, the Frye standard to expert testimony in a workers' compensation case).

Dr. Hudson relied on Andrews's testimony concerning a topic -- whether the conditions at the Arvin plant had exposed Johnson to an increased risk for contracting or aggravating emphysema/COPD -- for which there are generally accepted scientific methods or procedures for assessing the facts, but Andrews did not employ those methods or procedures. Andrews presented no evidence indicating that Johnson's occupational exposure to various materials and substances in the plant had exceeded the permissible limits set by OSHA. Arvin, on the other hand, presented evidence indicating that PELs had not been exceeded and that the plant had never been cited by either ADEM or OSHA for an air-quality violation. Cf. Kimberly-Clark Corp. v. Sawyer, 901 So. 2d at 741 (reversing, based on evidentiary error, the award of benefits for employee's workplace exposure to asbestos and noting that employer's mill had complied with OSHA guidelines for

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permissible limits of exposure to asbestos); McSween v. Michelin Tire Corp., 698 So. 2d 146, 148 (Ala. Civ. App. 1997) (affirming the denial of benefits for tinnitus as an occupational disease and noting that employer's plant had never exceeded OSHA guidelines for permissible noise levels); Taylor v. United States Steel Corp., 456 So. 2d 831, 833 (Ala. Civ. App. 1984) (affirming the denial of benefits for emphysema as an occupational disease and noting that results of air-quality studies for employer's mill were within permissible limits). In addition, Andrews did not testify, and Johnson presented no evidence indicating, that the PELs are not sufficiently protective of worker health. Cf. In re Welding Fume Prods. Liab. Litig., (No. 1:03-CV-17000, MDL No. 1535, Aug. 8, 2006) (N.D. Ohio 2006) (not reported in F. Supp. 2d) (holding admissible, over a Daubert challenge, the proposed testimony of an industrial hygienist that the PEL for occupational exposure to manganese is "not sufficiently protective of [a] welder's health").

We conclude that, had a proper and timely objection been made at trial, Dr. Hudson's opinion would have been inadmissible because it failed to satisfy the Frye test.

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Consequently, we cannot hold that it constituted substantial evidence of legal causation. No "fair-minded person[] in the exercise of impartial judgment [could] reasonably infer the existence of the fact sought to be proved," West v. Founders Life Assurance Co. of Florida, 547 So. 2d at 871 -- i.e., that the conditions at the Arvin plant had exposed Johnson to a risk of contracting emphysema/COPD, or aggravating his existing emphysema/COPD -- based on Dr. Hudson's testimony.

Dr. Hudson concluded, in effect, that Johnson had been exposed to occupational inhalants at a level sufficient to cause or contribute to his emphysema/COPD. In reaching that conclusion, however, she acknowledged that she had relied on the testimony of Andrews, Johnson, Thacker, and Jones -- none of whom testified that Johnson had been exposed to inhalants at a sufficient level for a sufficient time to increase his risk of contracting emphysema/COPD or aggravating his existing emphysema/COPD. Dr. Hudson also implied that, because Johnson suffered some of the same respiratory ailments that were listed on the MSDS documents as symptoms of overexposure to products in use at the Arvin plant, Johnson's disease was related to occupational exposure. She admitted, however, that

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she had no scientific basis for that conclusion, and she conceded that smoking was a major cause of the same symptoms.

We hold that Johnson failed to present substantial evidence of legal causation and that he was not entitled to workers' compensation benefits for an occupational disease. Accordingly, the judgment of the Fayette Circuit Court is reversed, and the cause is remanded with directions to enter a judgment in favor of Arvin.

REVERSED AND REMANDED.

Thompson, P.J., and Pittman and Moore, JJ., concur.

Bryan, J., concurs in the result, without writing.