

MARY BROWN MADISON, as Guardian of LEONARD TODD MADISON, her minor son, and as Widow of LEONARD E. MADISON, Deceased Employee, Plaintiffs v. INTERNATIONAL PAPER COMPANY, Employer, Self-Insured, (LIBERTY MUTUAL INSURANCE COMPANY, Servicing Agent) Defendants

NO. COA03-815

Filed: 6 July 2004

1. Workers' Compensation--causation--exposure to special hazard or excessive heat

The Industrial Commission did not err in a workers' compensation case by finding that exposure to special hazard or excessive heat was a contributing factor in a worker's death, because: (1) although there was some evidence in the case that the worker was potentially at risk for a heart attack regardless of the conditions to which he was exposed, there was also evidence that his work responsibilities to which he was exposed put him at a greater risk of a heart attack than if he had not had such a position; (2) there was expert testimony that the exposure to this type of heat was a significant contributing factor to the worker's heart attack and resulting death; (3) there was expert testimony that this type of exposure was in violation of industrial safety regulations and was very unsafe; and (4) expert testimony from both medical doctors and an industry safety professional was based on their respective reviews of the circumstances surrounding the worker's death and their own experience in their fields of expertise and was not mere speculation or conjecture.

2. Workers' Compensation--injury by accident--heart attack

The Industrial Commission did not err in a workers' compensation case by concluding that a worker's heart attack was a compensable injury by accident, because: (1) even though the worker had pre-existing heart disease, there was abundant expert testimony that heat would make him more susceptible to a heart attack and that the excessive heat to which his employment exposed him was a significant contributing factor in his fatal heart attack; (2) the Commission's findings of fact support the conclusion that the worker's employment subjected him a particular or special hazard from the elements, which caused, or significantly contributed to, his heart attack and resulting death, and further that this was a compensable injury by accident arising out of and in the course of his employment; and (3) there was evidence that exposure to these conditions in the manner in which the worker worked was in violation of safety regulations and would represent unsafe and extreme conditions for anyone.

Appeal by defendants from an opinion and award entered 28 March 2003 by the North Carolina Industrial Commission. Heard in the Court of Appeals 30 March 2004.

Taft, Taft & Haigler, P.A., by Thomas F. Taft; Brannon Strickland, P.L.L.C., by Anthony M. Brannon, for plaintiff-appellees.

Hedrick & Morton, L.L.P., by G. Grady Richardson, Jr. and P. Scott Hedrick, for defendant-appellants.

HUNTER, Judge.

International Paper Company ("International Paper") and Liberty Mutual Insurance Company (collectively "defendants") appeal from an opinion and award of the Full Commission of the North Carolina Industrial Commission ("the Commission") filed 28 March 2003 awarding benefits to Mary Brown Madison, as Guardian of Leonard Todd Madison, and as widow of Leonard E. Madison ("plaintiffs"). Because the Commission correctly found that Leonard E. Madison ("Madison") was exposed to special heat conditions, which contributed to his fatal heart attack, and concluded that Madison's death was the result of an injury by accident arising out of his employment, we affirm.

The evidence before the Commission tends to show that on 15 August 1997, Madison was sixty years of age and had worked for International Paper and its predecessors since 1979. He was employed as a 5A or B utility worker or assistant whose job duties included vacuuming lint filters in the "Carolina King" pulp dryer, which would take in wet pulp and dry it, turning the pulp into a continuous sheet of paper. The Carolina King pulp dryer was estimated to be at least half a football field in length and consisted of four levels. Each level had thirty doors that opened into the dryer that were accessible via catwalks along the levels. Temperatures inside the dryer ranged from 220 to possibly up to 300 degrees Fahrenheit. With the doors closed the dryer radiated heat exceeding ninety degrees Fahrenheit. The dryer was located in a building with large fans, but that was not air conditioned except for a control room, which included a break area for employees.

Each utility worker was required to vacuum one level of the dryer at some point during their shift. The worker would open a door, reach up into the dryer, and vacuum the lint filters located about ten feet high. The process would be repeated for each door on a level and would take two or three minutes per door and last from an hour to an hour and a half.

Madison was observed vacuuming lint filters at around 9:00 p.m., during the last two hours of his shift on 15 August 1997, and eventually clocked out at 10:36 p.m. that evening. Madison drove to the main gate of the paper mill and told the security officer that he was having chest pain and needed medical assistance. Madison's supervisor came to the gate and found Madison sitting in his truck. Madison was sweaty and stated that he "thought he had gotten too hot." As Madison was being transported to the hospital by ambulance, he suffered a major heart attack and died.

An autopsy by Dr. J. L. Almeida revealed Madison had an enlarged heart with a hypertrophic left ventricle, severe coronary artery atherosclerosis, an enlarged liver and spleen, and mild nephrosclerosis of the kidneys. These findings were consistent with significant coronary artery disease and hypertension. This included one primary coronary artery that was ninety-five percent (95%) blocked with plaque and Dr. Almeida testified that Madison was "a heart attack waiting to happen." Dr. Almeida concluded that Madison died from "ischemic heart disease with hypertrophic cardiomyopathy with a contributing factor being physical activity in a hot environment." There was no evidence Madison suffered the heart attack because of heat stroke or heat exhaustion.

Plaintiffs presented deposition testimony from Dr. Mark Friend, an industrial safety professional, as an expert in industrial safety. Dr. Friend based his expert testimony on his own inspection of the International Paper plant and his subsequent report, as well as his recollection of testimony presented before the deputy commissioner at the hearing. Dr. Friend stated that in his opinion the International Paper plant violated safety regulations by failing to have anyone directly monitoring employees vacuuming the lint filters in the dryer. Furthermore, by allowing unsupervised employees to even break the threshold of the doors to the dryer, which he described as a "permit-required confined space" meaning it was not fit for continuous human occupancy, International Paper, in Dr. Friend's opinion, was in violation of government safety regulations.

During his inspection, Dr. Friend took measurements of the heat radiating from the doors which averaged around ninety degrees Fahrenheit. Although he did not measure temperature inside the doors, Dr. Friend testified that in adjusting his equipment during the inspection, he had received a first-degree burn on his hand from the inside of the dryer door.¹ He testified that, based on his own research and experimentation, it would have required heat in excess of 200 hundred degrees Fahrenheit to cause such a burn

¹ Dr. Friend testified that he did not measure the temperature inside the threshold of the dryer door during his inspection because he had been informed through International Paper that employees did not cross the threshold in cleaning the lint filters. He, however, learned during the testimony before the deputy commissioner through the testimony of an employee who actually performed this work, that the employees would have to lean through the doorway in order to reach the lint filter.

from contact with metal. Moreover, Dr. Friend observed that there was nowhere available where an employee would be likely to take a break in the middle of cleaning the lint filters. Thus, it would be more likely an employee would simply attempt to work straight through and finish the job.

In his opinion, the working conditions under which employees at International Paper were required to clean the lint filters of the dryer were "very unsafe. These people were subjected to high levels of . . . heat . . . and they were subjected for periods of time that would be in violation of all standards." Dr. Friend concluded in his report that Madison's death was a "heat stress death." Dr. Friend based his conclusion on the exposure to high levels of heat, which were measured at temperatures up to 120 degrees Fahrenheit outside the threshold of the dryer doors and that he described as like opening "a pizza oven," as well as his review of the circumstances surrounding Madison's death.

In addition, Dr. Franklin Tew, an expert in cardiology testified that, within a reasonable degree of medical certainty, heat was a significant contributing factor in Madison's heart attack. Dr. Tew based his opinion on his knowledge of Madison's health condition, and the temperatures to which Madison would have been exposed. In addition, Dr. Tew testified his belief that heat played a contributing role in Madison's heart attack was based on his own observations in clinical practice that heart disease patients "did worse in the summer than in the winter"; the use by heart surgeons of cardioplegia, the practice of stopping the heart and keeping it cool to prevent the expenditure of energy stored

during surgery; the fact that as temperature increases, the body heats up and the heart is required to work harder; that heat may be linked to increased susceptibility to arrhythmia; and that heat is a stressor to the body that can precipitate a heart attack in someone susceptible to coronary heart disease.

Dr. Almeida opined that, within a reasonable degree of medical certainty, that the circumstances around Madison's death, "of temperature and physical activity would be a stressful environment stressing the cardiovascular system of an individual. And that an individual with not much cardiovascular reserve would be extremely compromised." Dr. Almeida further opined that "the temperatures would be a contributing factor" to Madison's heart attack and "working in a hot environment would have stressed [Madison's] cardiovascular system and would have caused his heart attack."

The Commission in its ultimate finding of fact found:

17. [Madison] was never diagnosed with heat stroke. He died due to cardiac arrest associated in part with his preexisting medical conditions. In fact, [Madison's] coronary artery occlusion was a "widow maker" -- a medical term which refers to the severity and the location of his coronary artery occlusion. The medical evidence, however, particularly from the second deposition of Dr. Almeida and from his autopsy report, establishes that a "contributing factor" to the heart attack was [Madison's] work "in a hot environment." Although the evidence does not establish that [Madison] suffered from heat exhaustion or heat stroke, the uncontroverted medical evidence is that decedent was exposed to a "special hazard," heat, in the course of his employment and that the "special hazard" was a contributing factor to his heart attack and death.

The Commission concluded as a matter of law:

1. On [15 August] 1997, [Madison] sustained an injury by accident arising out of and in the course of his employment with [International Paper]. . . . Plaintiff[s] ha[ve] established that [Madison's] employment subjected him to a particular or special hazard from the elements which caused his heart attack and resulting death.

The issues presented on appeal are whether (I) there was sufficient evidence to support the Commission's finding that exposure to special hazard heat was a contributing factor to Madison's heart attack and death, and (II) the Commission's findings supported its conclusion that Madison's heart attack was a compensable injury by accident caused by special hazard heat.

I.

[1] Defendants first contend that there was no evidence to support the Commission's finding that exposure to special hazard or excessive heat was a contributing factor in Madison's death.

Appellate courts reviewing decisions of the Commission are "limited to reviewing whether any competent evidence supports the Commission's findings of fact and whether the findings of fact support the Commission's conclusions of law." *Deese v. Champion Int'l Corp.*, 352 N.C. 109, 116, 530 S.E.2d 549, 553 (2000). "The evidence tending to support plaintiff's claim is to be viewed in the light most favorable to plaintiff, and plaintiff is entitled to the benefit of every reasonable inference to be drawn from the evidence.'" *Id.* at 115, 530 S.E.2d at 553 (quoting *Adams v. AVX Corp.*, 349 N.C. 676, 680-81, 509 S.E.2d 411, 413-14 (1998)). In reviewing the Commission's findings of fact, an appellate court must not weigh the evidence presented to the Commission or decide the case on the basis of the weight of the evidence. *Adams*, 349

N.C. at 681, 509 S.E.2d at 414. Rather, the Commission is the "sole judge of the weight and credibility of the evidence." *Deese*, 352 N.C. at 116, 530 S.E.2d at 553. An appellate court must determine only whether the record contains any evidence tending to support facts found by the Commission. *Adams*, 349 N.C. at 681, 509 S.E.2d at 414.

"In a workers' compensation claim, the employee 'has the burden of proving that his claim is compensable.'" *Holley v. ACTS, Inc.*, 357 N.C. 228, 231, 581 S.E.2d 750, 752 (2003) (quoting *Henry v. A.C. Lawrence Leather Co.*, 231 N.C. 477, 479, 57 S.E.2d 760, 761 (1950)). "An injury is compensable as employment-related if "any reasonable relationship to employment exists."" *Id.* (quoting *Kiger v. Bahnson Serv. Co.*, 260 N.C. 760, 762, 133 S.E.2d 702, 704 (1963)). "Although the employment-related accident 'need not be the sole causative force to render an injury compensable,'" *id.* (quoting *Hansel v. Sherman Textiles*, 304 N.C. 44, 52, 283 S.E.2d 101, 106 (1981)), "the plaintiff must prove that the accident was a causal factor by a 'preponderance of the evidence,'" *id.* at 232, 581 S.E.2d at 752 (quoting *Ballenger v. ITT Grinnell Indus. Piping, Inc.*, 320 N.C. 155, 158-59, 357 S.E.2d 683, 685 (1987)).

In *Holley*, the North Carolina Supreme Court discussed the requirements for an expert medical opinion to be competent evidence sufficient to support a finding of causation in workers' compensation cases involving complicated medical questions:

In cases involving "complicated medical questions far removed from the ordinary experience and knowledge of laymen, only an expert can give competent opinion evidence as to the cause of the injury." *Click v. Pilot Freight Carriers, Inc.*, 300 N.C. 164, 167, 265

S.E.2d 389, 391 (1980). "However, when such expert opinion testimony is based merely upon speculation and conjecture, . . . it is not sufficiently reliable to qualify as competent evidence on issues of medical causation." *Young v. Hickory Bus. Furn.*, 353 N.C. 227, 230, 538 S.E.2d 912, 915 (2000). "[T]he evidence must be such as to take the case out of the realm of conjecture and remote possibility, that is, there must be sufficient competent evidence tending to show a proximate causal relation." *Gilmore v. Hoke Cty. Bd. of Educ.*, 222 N.C. 358, 365, 23 S.E.2d 292, 296 (1942)

Id. at 232, 581 S.E.2d at 753. In addition, the Court explained: "Although expert testimony as to the *possible* cause of a medical condition is admissible if helpful to the jury, it is insufficient to prove causation, particularly 'when there is additional evidence or testimony showing the expert's opinion to be a guess or mere speculation.'" *Id.* at 233, 581 S.E.2d at 753 (citations omitted).

Although there is some evidence in this case that Madison was potentially at risk for a heart attack regardless of the conditions to which he was exposed, there is also evidence that his work responsibilities exposed him to heat measured at approximately ninety degrees Fahrenheit for a period of an hour to an hour and a half, in addition to periodic exposure to heat in excess of 200 degrees Fahrenheit while the dryer doors were open during vacuuming, and that this exposure put him at a greater risk of a heart attack than if he had not had such a position. There was also expert testimony that the exposure to this type of heat was, in fact, a significant contributing factor to his heart attack and resulting death. Furthermore, there was expert testimony that this type of exposure was in violation of industrial safety regulations and was very unsafe. The expert testimony from both medical

doctors and an industrial safety professional was based on their respective reviews of the circumstances surrounding Madison's death and their own experience in their fields of expertise and was not mere speculation or conjecture. Thus, there is sufficient evidence to support the Commission's ultimate finding of fact that the heat to which Madison was exposed was a contributing factor to his heart attack.

II.

[2] Defendants also argue that the Commission erred in concluding that Madison's heart attack was a compensable injury by accident. This Court has summarized the law surrounding the compensability of a heart attack in the realm of workers' compensation as follows.

To be compensable under the Workers' Compensation Act, an injury must result from an "accident arising out of and in the course of the employment" N.C. Gen. Stat. § 97-2(6) "The claimant has the burden of proving each of these elements." *Pickrell v. Motor Convoy, Inc.*, 322 N.C. 363, 366, 368 S.E.2d 582, 584 (1988). "When an employee is conducting his work in the usual way and suffers a heart attack, the injury does not arise by accident and is not compensable." *Cody v. Snider Lumber Co.*, 328 N.C. 67, 71, 399 S.E.2d 104, 106 (1991) (citing *Jackson v. Highway Commission*, 272 N.C. 697, 701, 158 S.E.2d 865, 868 (1968)). "However, an injury caused by a heart attack may be compensable if the heart attack is due to an accident, such as when the heart attack is due to unusual or extraordinary exertion, *Lewter v. Abercrombie Enterprises, Inc.*, 240 N.C. 399, 404, 82 S.E.2d 410, 415 (1954), or extreme conditions." *Id.* (citing *Dillingham v. Yeargin Construction Co.*, 320 N.C. 499, 503, 358 S.E.2d 380, 382, *reh'g denied*, 320 N.C. 639, 360 S.E.2d 84 (1987)).

Wall v. North Hills Properties, Inc., 125 N.C. App. 357, 361, 481 S.E.2d 303, 306 (1997). In this case, the Commission based its ruling on the exception that Madison suffered his heart attack after being exposed to extreme conditions.

"[W]here the employment subjects a workman to a special or particular hazard from the elements, such as excessive heat or cold, likely to produce sunstroke or freezing, death or disability resulting from such cause usually comes within the purview of the compensation acts. . . . The test is whether the employment subjects the workman to a greater hazard or risk than that to which he otherwise would be exposed."

Dillingham v. Yeargin Construction, Co., 320 N.C. at 503, 358 S.E.2d at 382 (quoting *Fields v. Plumbing Co.*, 224 N.C. 841, 842-43, 32 S.E.2d 623, 624 (1945)).

Defendants contend that Madison's heart attack was not compensable because there was no evidence that Madison suffered correlating heat stroke, heat exhaustion, or heat prostration. In so doing, defendants rely on language in *Dillingham*, which stated:

Fields represents the majority rule in this country. Other jurisdictions hold, with virtual unanimity, that when the conditions of employment expose the claimant to extreme heat or cold, injuries such as heatstroke, heat exhaustion, heat prostration, sunstroke, freezing, and frostbite are considered accidental. 1B A. Larson, *The Law of Workmen's Compensation* § 38.40 (1987); 99 C.J.S. *Workmen's Compensation* § 187 (1958); 83 A.L.R. 234 (1933).

Id. *Fields* and *Dillingham*, however, do not limit compensable injuries arising from excessive heat only to heat stroke, exhaustion, and heat prostration. Rather the proper determination remains as stated in both *Fields* and *Dillingham*: "The test is whether the employment subjects the workman to a greater hazard

[from the elements] or risk than that to which he otherwise would be exposed.'" *Id.*

Defendant further contends that the Commission erred in concluding that Madison's heart attack was compensable where the evidence and findings of fact revealed he was "a heart attack waiting to happen" and that the excessive heat exposure was at most a contributing factor in causing the fatal heart attack.

"In order for an injury to 'arise out of employment' there must exist some causal connection between the injury and the employment." *Rivera v. Trapp*, 135 N.C. App. 296, 300-01, 519 S.E.2d 777, 780 (1999). "In other words, the employment must be a contributing cause or bear a reasonable relationship to the employee's injuries." *Id.* at 301, 519 S.E.2d at 780. The employment, however, need not be the sole causative force if the physical aspects of the employment contribute in some reasonable degree to bring about or intensify the condition which renders the employee susceptible to such accident and consequent injury. *Kendrick v. City of Greensboro*, 80 N.C. App. 183, 186, 341 S.E.2d 122, 124 (1986).

Therefore, in this case, where even though Madison had pre-existing heart disease, there was abundant expert testimony that heat would make Madison more susceptible to a heart attack and that the excessive heat to which his employment exposed him was, in fact, a significant contributing factor in his fatal heart attack. Accordingly, the Commission's findings of fact support the conclusion that Madison's employment subjected him to a particular or special hazard from the elements, which caused, or significantly

contributed to, his heart attack and resulting death, and further that this was a compensable injury by accident arising out of and in the course of his employment.

Defendants argue that the Commission's ruling results in an expansion of the limited exception contained in *Fields* and *Dillingham* and amounts to a ruling that if heat causes any problem for an employee, it is a compensable workers' compensation claim, without regard to proof of exposure to extreme or hazardous conditions, or whether the employment puts the employee at a greater risk of such harm than members of the general public. We disagree. The evidence in this case clearly shows Madison was exposed to extreme heat, including radiant temperatures around ninety degrees Fahrenheit for a period of an hour to an hour and a half and heat in excess of 200 degrees Fahrenheit inside the dryer when the doors were open, which according to the medical expert testimony was a significant contributing factor in his fatal heart attack. See *Dillingham*, 320 N.C. at 504, 358 S.E.2d at 383 (province of medical experts, not appellate courts, to determine whether temperature was a factor in an employee's injury considering the circumstances). In addition, there was evidence that exposure to these conditions in the manner in which Madison worked, was in violation of safety regulations and would represent unsafe and extreme conditions for anyone. Therefore, there was proof of exposure to extreme or hazardous heat and, as such, defendant's concerns are overruled.

Affirmed.

Judges TYSON and BRYANT concur.