

UNITED STATES COURT OF APPEALS
for the Fifth Circuit

No. 94-41310

JUSTISS OIL COMPANY, INC.,

Plaintiff/Cross-Defendant/
Appellant,

VERSUS

KERR-MCGEE REFINING CORPORATION,

Defendant/Counter-Claimant/
Appellee.

Appeals from the United States District Court
for the Western District of Louisiana

February 28, 1996

Before JOLLY, DUHÉ, and DENNIS, Circuit Judges,

DUHÉ, Circuit Judge:

Kerr-McGee Refining Corporation ("Kerr-McGee") owns and operates an oil refinery in Cotton Valley, Louisiana. In early 1990, the aluminum floating roof of a crude oil storage tank ("Tank 29") at the Cotton Valley refinery collapsed.¹ Kerr-McGee

¹ Tank 29, built in 1938, was a 55,000 barrel crude oil storage tank. The tank was 114 feet in diameter and approximately 30 feet high. It was accessible either by ascending a ladder leading to the man way on the tank's roof or through a side man way located a few feet above ground level. In 1979, a cone-shaped aluminum floating roof was installed inside the tank to act as a barrier to the escape of vapors emitted by the materials stored therein. The floating roof was damaged beyond repair, collapsed, sank into the tank, and became partially submerged in the contents at the bottom of the tank. The collapsed roof came to rest in the bottom of the tank at an angle slanting upward from one side that actually contacted the floor to the other side that remained about four (4)

contacted Baker Tank Company, a division of Justiss Oil Company, Inc. ("Justiss"), and solicited a bid for the manufacture and installation of a new floating roof. In response, Ken Moose, Baker Tank Company's Construction Manager, telephoned Gerald Collins, the Kerr-McGee Plant Manager. During this conversation, Collins requested that Moose submit a separate proposal for dismantling and removing the collapsed roof from inside the tank. Moose agreed to submit this bid, and asked to view the job site.

After meeting with Collins, the two men went to Tank 29 and were joined by Herschel Jones, Kerr-McGee's Maintenance Foreman. Moose climbed to the top man way and looked inside the tank to evaluate its condition and the floating roof. Kerr-McGee had removed most of Tank 29's contents and was continuing to wash and to vacuum the inside of the tank. Moose was satisfied that Baker Tank Company could remove the roof, and upon Collins' indication that they had the job, agreed to deploy a crew to the refinery. Over the three days that followed Moose's visit, Kerr-McGee continued to wash Tank 29 and utilized high-pressure steam to free it of hydrocarbon vapors.

Subsequently, Justiss and Kerr-McGee contracted for the removal of the floating roof.² Under the contract, Justiss was

feet off the tank floor and above the side man way.

² The district judge found the Kerr-McGee Construction or Field Services Agreement was the contract between the parties. Def.'s Ex. 17. Additionally, he found this agreement incorporated the Baker Tank Quotation, submitted by Baker Tank as a bid for doing this work, and the Terms, Conditions and Contractual Obligations document accompanying the quotation. Pl.'s Exs. 21, 23.

obligated to provide all labor, supervision, materials, tools, equipment, and services needed to complete the job. Further, Justiss warranted that the work would be performed in a good, safe, workmanlike manner in conformity with the highest industry standards.³ Kerr-McGee was obligated to first "clean[] and gas free[]" the tank, and to test the concentration of hydrocarbon vapors in the tank's atmosphere each morning before the Justiss crew entered.⁴ Although Kerr-McGee was only required to test the tank once every morning, Justiss could request additional testing at any time.⁵ "[C]onfined or enclosed space' means any space having a limited means of egress, which is subject to the accumulation of toxic or flammable contaminants or has an oxygen deficient atmosphere. Confined or enclosed spaces include . . . storage tanks" 29 C.F.R. § 1926.21(b)(6)(ii) (1989) (submitted into evidence as Def.'s Ex. 39).⁶ This term refers to

³ These obligations were imposed by the Kerr-McGee Construction or Field Services Agreement, paragraphs 1 and 5, and Appendix A. Def.'s Ex. 17.

⁴ The Baker Tank Quotation provided: "Tank to be cleaned and gas freed by others [i.e., Kerr-McGee]." Pl.'s Ex. 21. Likewise, the Terms, Conditions and Contractual Obligations document, in the section titled "Tank Repair Work (Hot Work)," required that prior to any on-site work by Baker Tank Company, Kerr-McGee must ensure that the following work has been completed:

Tank is emptied, cleaned, decontaminated and freed of all product, hazardous material, toxic and explosive gasses, and is maintained at all times in a safe condition.

All pipe lines are disconnected and/or blanked.

Pl.'s Ex. 23.

⁵ Tank 29 was a "confined space." See 29 C.F.R. § 1926.21(b)(6)(ii) (1989) (submitted into evidence as Def.'s Ex. 39). Industry standards require, for safe operations in a confined space

like Tank 29, that the space be gas free.

The term "gas free" is defined in the industry as a lower

the use of a portable Combustible Gas and Oxygen Alarm to sample atmosphere for combustible gases and vapors.⁷

The Justiss crew arrived at the refinery on Tuesday, March 6, 1990, and reported to the Kerr-McGee offices. While there, Darwin Parker, Manager of Operations and Safety at the refinery, gave the crew foreman, Thomas McKelvey, safety pamphlets that he and his crew were to read and to sign prior to commencing work. After all the signed pamphlets were collected,⁸ Parker took the Justiss crew to Tank 29. Another Kerr-McGee employee sniffed the tank, obtained an L.E.L. reading of less than 10%, and issued a hot work permit authorizing the crew to go to work.

The Justiss crew worked for three and a half to four days without incident. Each morning before the Justiss crew entered Tank 29, a Kerr-McGee employee sniffed the tank, obtained an L.E.L. reading of less than 10%, and gave McKelvey a hot work permit. McKelvey signed each hot work permit verifying that all necessary precautions had been taken and that work could begin.

On the fourth day of work, Sunday, March 11, 1990, Kerr-McGee issued a hot work permit to McKelvey around seven o'clock in the morning that was effective until five o'clock that evening, provided conditions inside the tank did not change. McKelvey's crew consisted of three laborers, Steve Vega, Chris Doyle, and Ricky Martin. After working all morning, the crew broke for lunch, returned about an hour later, reentered the tank, and commenced working again. Shortly thereafter, a Kerr-McGee employee charged with the responsibility of refueling the air compressor that powered the ventilation fan bolted to the side man way of Tank 29 asked McKelvey if the crew would take their afternoon break early so he could refuel the compressor and go home. McKelvey agreed and the crew took a fifteen to twenty minute break. When they returned, Vega, Doyle, and Martin went back into Tank 29 via the top man way while McKelvey went to his truck some seventy to one hundred feet away to retrieve a can of gasoline. Before McKelvey

explosive limit ("L.E.L.") reading of 10% or less. See Cleaning Petroleum Storage Tanks, API Publication 2015, §§ 2.2.1, 2.2.3 (Am. Petroleum Inst., 3d ed., Sept. 1986) (submitted into evidence as Pl.'s Ex. 221). To obtain such a reading, the tank must be "sniffed." "Sniffing" refers to the use of a portable Combustible Gas and Oxygen Alarm to sample the atmosphere for combustible gases and vapors. If a "sniffing"

of the confined space indicates that the area is gas free, a "hot work" permit may be issued. A hot work permit indicates that the concentration of combustible gases in a confined space like Tank 29 is at a level suitable for the safe use of spark-producing tools over a designated period of time.

⁸ McKelvey testified that, although he signed the booklet certifying he had read it, he in actuality had not. 25 R. at 145.

returned, while Vega, Doyle, and Martin were inside, Tank 29 exploded. All three men inside the tank were killed.⁹

After settling the claims of the deceased workers' families, Justiss sued Kerr-McGee on theories of tort and contract to recover its losses. Kerr-McGee counterclaimed asserting breach of contract by Justiss, and seeking damages for the destruction of its property. A nine day bench trial was held. At the conclusion of the trial, District Judge Donald E. Walter found that the source of fuel for the explosion and flash fire was vapors emitted from gasoline brought into Tank 29 by the Justiss crew. Accordingly, he held Kerr-McGee free from fault. Further, he ruled in favor of Kerr-McGee on its counterclaim. Justiss appealed, asserting five errors.¹⁰

⁹ Dr. George M. McCormick, II, who autopsied the bodies, testified that all three men died almost instantly. 22 R. at 114-15. More specifically, Dr McCormick stated the cause of death for Chris Doyle and Steve Vega was "[i]nhalation of flame, smoke and/or superheated gas" resulting in acute cardiorespiratory failure, with the concussive force of the explosion being a contributing factor. As for Ricky Martin, the cause of death was "acute carbon monoxide poisoning" from inhaling smoke, flame and/or superheated gas, also resulting in acute cardiorespiratory failure. Pl.'s Ex. 144 (summaries of Dr. McCormick's autopsy findings).

Additionally, both experts classified the fire in Tank 29 as a "deflagration," or flash fire. This is consistent with the testimony of other witnesses on the scene that fire did not linger after the explosion. See, e.g., 22 R. at 56-57 (testimony of Herschel Jones); 25 R. at 111 (testimony of McKelvey that he did not recall ever seeing any flames).

¹⁰ The specific errors asserted were:

- (1) The Trial Court's application of "Occam's Razor", as a controlling legal precedent is an erroneous and incorrect view of the law and an abuse of discretion.
- (2) The Trial Court's finding of fact, as to the source of fuel for the fire, is not supported by substantial evidence and is clearly erroneous.
- (3) The Trial Court's favorable ruling on the Kerr-McGee Counterclaim was based on a standard of proof far less than required by law; i.e. a preponderance of the evidence.
- (4) The Trial Court failed to follow and apply the doctrine of strict liability.
- (5) The Trial Court failed to follow and apply the law of contract.

I. Error One

Justiss argues the district court erred by applying Occam's razor as controlling legal principle in deciding which evidence of the events leading to the explosion and flash fire in Tank 29 to credit. More precisely, Justiss argues that the district court, in relying on this premise, applied an incorrect legal standard in making its factual findings.¹¹ Justiss contends that we should discard the district court's factual findings and conduct de novo review of the trial record in accordance with applicable law to ascertain the true cause of these deaths.

In his oral findings, Judge Walter stated:

The testimony has suggested numerous theories as to how the tank exploded. Clearly Tank 29 was not gas free at the time of the explosion. The explanations of why the tank was not gas free range from the very simple to indeed the hyper-complex. I have used Occam's razor which is as valid juridically as it is scientifically. Basically Holcomb's [sic] razor is that the simplest of competing theories should be preferred over more complex or subtle ones.

28 R. at 71-72.¹² Though Justiss interprets this statement to indicate that Judge Walter's fact-finding was confined by Occam's

Original Brief of Justiss Oil Company, Inc., at vi.

¹¹ Justiss complained, "With due respect to the Trial Court, there is no jurisprudential authority for the application of 'Occam's Razor' as a controlling juridical principle." Original Brief of Justiss Oil Company, Inc., at 15. Continuing, Justiss argued, "More important, the Trial Judge has based his entire ruling on an unprecedented juridical concept, i.e. 'Occams Razor'." Id.

¹² Occam's, or Ockham's, razor has been defined as "the philosophic rule that entities should not be multiplied unnecessarily." Webster's Third New International Dictionary (Unabridged) 1561 (Philip B. Grove, ed. in chief, 1981). While Judge Walter's interpretation may not fit squarely with this dictionary's definition, his understanding does find support in the jurisprudence. See, e.g., Commissioner of Internal Revenue v. Engle, 464 U.S. 206, 230, 104 S.Ct. 597, 611 (1984) (Blackmun, J., dissenting); Brown v. Vance, 637 F.2d 272, 281 (5th Cir. 1981); Alabama-Tennessee Natural Gas Co. v. Federal Power Comm'n, 359 F.2d 318, 335 (5th Cir.), cert. denied, 385 U.S. 847, 87 S.Ct. 69 (1966); Swann v. Olivier, 22 Cal. App. 4th 1324, 1329 (Cal. Ct. App. 1994); Swierupski v. Korn, 419 N.Y.S.2d 87 (N.Y. App. Div. 1979); Stockbridge Sch. Dist. v. Department of Pub. Instruction Dist. Boundary Appeal Bd., 531 N.W.2d 624 (Wis. Ct. App.), review granted, 537 N.W.2d 570 (1995).

razor, this interpretation is misguided. Judge Walter's oral reasons make clear that his findings were not merely an exercise of this 14th Century maxim, but were based upon his evaluation and weighing of all evidence presented. In finding that Justiss' crew was the source of the fuel, he stated:

This finding is obviously dependent on which McElvey [sic] story I believe. That told to the E.M.S. workers or that expressed to OSHA representatives and indeed in this court.

The E.M.S. workers had no reason to lie. The story makes sense. And frankly accepting the rescue workers['] [sic] or E.M.S. workers['] [sic] version of what McElvey's [sic] admission was explains all. . . .

. . . Under any of [Justiss' several scenarios suggesting how Kerr-McGee's conduct caused the fire], hydrocarbons could have reached dangerous levels but [Kerr-McGee's] version is more persuasive.

28 R. at 73. While the reference to Occam's razor may be unfortunate for its potential to create post-judgment controversy, Judge Walter's reference to the maxim is not inappropriate, because in fact he did not abdicate his duty as fact-finder. Judge Walter evaluated the evidence before him, weighed it according to his determinations of credibility and trustworthiness, and drew reasonable inferences and conclusions supported by his findings. Thus, insofar as Justiss attacks the district court's findings as made by the application of an allegedly improper legal standard, we reject this contention and affirm Judge Walter's actions.

II. Errors Two, Three, and Four

Justiss' assertions two, three, and four are grounded in a single argument that the district court erred in finding Justiss employees introduced into Tank 29 the source of fuel for the

explosion and flash fire. For example, in disputing the district court's ruling on Kerr-McGee's counterclaims, Justiss states:

In the "Memorandum Ruling" issued on October 26, 1994, the Trial Court found that the actions of Justiss/Baker Tank Company were "grossly negligent". In his oral ruling the Trial Court described the crew as "reckless". Such rulings can only be predicated on the finding that the Justiss crew brought gasoline into the tank, virtually insuring their own demise.

Such a finding and the Trial Court's favorable ruling on the Kerr-McGee Counterclaim are totally and completely unsupported by the evidence. A complete review of the record will show that such a finding is "clearly erroneous" and not the "truth and right of the case." . . .

. . . . The Kerr-McGee Counterclaim succeeds (or fails) on the Trial Court's finding that the Justiss crew introduced gasoline into the tank.

Original Brief of Justiss Oil Company, Inc., at 23, 25 (citations omitted). Likewise, Justiss' argument regarding the district court's failure to apply strict liability to Kerr-McGee's conduct is summarized as follows:

The District Court considered opposing Motions For Summary Judgment, regarding the application of Louisiana's doctrine of strict liability to the fire in Tank 29. Upon determining that the source of fuel for the fire was flammable liquids brought into the tank by Justiss employees, the Court never reached the issue. Justiss respectfully suggests that, had the District Judge correctly resolved the question of a fuel source, that is, found that the evidence clearly preponderated in favor of a finding that the fuel for the fire was the residual hydrocarbons left in the tank after Kerr-McGee's failure to clean it, a correct application of Louisiana law would have required the District Court to find Kerr-McGee strictly liable for the damages suffered by Justiss.

Id. at 28 (emphasis added). Thus, the decisive issue on appeal is whether the district court committed clear error in finding that Justiss employees provided the fuel source for the explosion and flash fire that resulted in these deaths.

"Findings of fact, whether based on oral or documentary evidence, shall not be set aside unless clearly erroneous, and due regard shall be given to the opportunity of the trial court to judge of the credibility of the witnesses." Fed. R. Civ. P. 52(a). A finding of fact is said to be "clearly erroneous" when, notwithstanding there is evidence to support it, the reviewing court upon examination of the entire evidence is left with the definite and firm conviction that a mistake has been committed. United States v. United States Gypsum Co., 333 U.S. 364, 395, 68 S.Ct. 525, 542 (1948). This standard precludes a reviewing court from reversing a finding of the trier of fact simply because it is convinced that it would have decided the case differently. Anderson v. City of Bessemer City, 470 U.S. 564, 573, 105 S.Ct. 1504, 1511 (1985). In fact, "[i]f the district court's account of the evidence is plausible in light of the record viewed in its entirety, the court of appeals may not reverse it even though convinced that had it been sitting as the trier of fact, it would have weighed the evidence differently. Where there are two permissible views of the evidence, the fact-finder's choice between them cannot be clearly erroneous." Id. at 573-74, 105 S.Ct. at 1511. With this deferential standard guiding our inquiry, we turn to the record.

Before addressing the district court's contested factual findings, we enumerate those facts which the parties agree are established by the record: Justiss deployed an inexperienced, untrained crew to remove this roof, and this crew worked for three

to four days in the residual sludge in Tank 29 without incident. Either the ungrounded electrical junction boxes or the electric extension cords employed by the Justiss crew, which entered Tank 29 by the side man way through a gap beneath the ventilation fan and which were submerged at various times in the water and sludge on the tank's bottom, produced sparks that were more probably than not the ignition source for the fire. Finally, Justiss admits that, prior to the explosion, its crew reversed the direction of the ventilation fan connected to Tank 29, so that the fan was blowing air into the tank instead of suctioning air out, and that this provided the oxygen necessary to sustain an explosion and flash fire in the tank.

With these facts established, we note that three elements are required for an explosion or fire to occur: (1) an ignition source; (2) a fuel source; and (3) an oxygen source. See Cleaning Petroleum Storage Tanks, API Publication 2015, § 2.2.1 (Am. Petroleum Inst., 3d ed., Sept. 1986)(Pl.'s Ex. 221). Justiss admits its employees provided the first and third elements. Thus, with respect to the cause of the explosion and flash fire in Tank 29, we are concerned only with discovering who is responsible for providing the fuel source.

Justiss argues the district court erred in not finding that the fuel source was residual hydrocarbons left in Tank 29 by Kerr-McGee as a result of Kerr-McGee's inadequate efforts to clean the

tank.¹³ Continuing, Justiss claims the district court ignored evidence preponderating in favor of this conclusion. First, Justiss contends Kerr-McGee admitted a lack of specialized skill or expertise in tank cleaning. Additionally, Justiss argues its expert, H.G. Nebeker, a chemical engineer, testified that the tank was not cleaned according to industry standards, that the most likely source of fuel was residual hydrocarbons trapped either in the sludge in the bottom of the tank or in the roof or its pontoons,¹⁴ and that his examination of the results of chemical

¹³ Justiss originally claimed that Kerr-McGee also improperly monitored Tank 29. The trial record establishes, however, that at no time during the job did the Justiss crew request additional monitoring. See, e.g., 25 R. at 87-88. Further, the parties agreed that continuous monitoring would not have prevented this accident because of the nature of the fire. See Reply Brief of Justiss Oil Company, Inc. at 10-11; Supplemental Brief of Kerr-McGee Refining Corp. at 2.

¹⁴ In this court, Justiss admits there are only two possible sources for the fuel: residual hydrocarbons resulting from Kerr-McGee's failure to properly clean and gas free Tank 29 or gasoline brought into the tank by Justiss employees. At trial, however, Justiss attempted to establish two other possible fuel sources.

First, Justiss claimed Tank 29 had not been properly or completely isolated from the rest of the refinery prior to the explosion. Accordingly, because the refinery experienced an "upset" on the day of the explosion, and because Tank 29 was a "slop" tank prior to becoming incapacitated by the collapsed roof, Justiss suggested that when Kerr-McGee's employees reacted to this upset by removing product from the refining process and returning it to slop tanks, some of the product or its vapors entered Tank 29. This theory, however, was abandoned by Justiss' counsel in brief and at oral argument, when he admitted the record clearly showed Tank 29 was properly and completely sealed off from the refinery.

During examination of its expert, H.G. Nebeker, Justiss tried to develop a second theory. Mr. Nebeker hypothesized that vapors from oil resting atop a waste-water pond had backed up through the waste-water drainage system and were being emitted into the air surrounding Tank 29 from the ground drain located adjacent to the tank. Because this theory was not set forth in Mr. Nebeker's pretrial report of his findings and opinions, the district court

analyses performed on sludge samples taken from the tank after the incident was consistent with an explosion and flash fire fueled by residual hydrocarbons. Justiss states that Kerr-McGee's own expert agreed that residual hydrocarbons were the fuel source, and consequently, because only two experts testified, the weight of such testimony was in Justiss' favor.

To further support its position, Justiss complains that the district court relied solely on the equivocal testimony of a single witness to support its finding. Justiss argues E.M.T. John Byrd never testified that McKelvey said he took gasoline into Tank 29, and strenuously points out that McKelvey testified vehemently that neither he nor any member of his crew ever took gasoline into the tank. Moreover, Justiss argues that the district court not only made an impermissible inference from Byrd's testimony that gasoline was taken into the tank, but also extended its error by inferring from this finding that a vessel other than McKelvey's gas can was used to transport the gasoline inside. No evidence of another container was ever provided, other than Kerr-McGee's expert's speculation on its existence, and McKelvey's gas can was proven to have been found outside of Tank 29 intact and unscathed after the explosion.¹⁵

sustained Kerr-McGee's objection that the theory could not be posed for the first time at trial and that the testimony was therefore inadmissible. Justiss does not contest this ruling, and its admission that Tank 29 was totally isolated from such external flows would now be sufficient to discredit this view.

¹⁵ Justiss also complained that several key Kerr-McGee documents pertaining to refinery activities on the day of the explosion were never provided to them. Accordingly, Justiss argues a presumption

The record makes clear that the district court, in finding that gasoline brought into the tank by the Justiss employees was the fuel source, simply made a credibility choice. Judge Walter favored the testimony of E.M.T. Byrd and rejected McKelvey's testimony as untrustworthy. Not only is such a determination not clearly erroneous, but the theory accepted by Judge Walter is supported by the evidence.

that unproduced evidence contains facts unfavorable to the party failing or refusing to produce it arises in its favor and supports its position. Herbert v. Wal-Mart, 911 F.2d 1044, 1046 (5th Cir. 1990) (citing Wigmore on Evidence § 285, at 192 (Chadbourn ed. 1970)).

As the district court noted, "[t]he spoilation [sic] argument advances [Justiss] nowhere." 28 R. at 108. The documents sought by Justiss and not produced by Kerr-McGee consisted of the control room log for March 11, 1990, tank summary reports for March 10 and 11, 1990, certain refinery gauge reports, and maps of the refinery and tank farm indicating the layout of underground pipelines. The relevance of such documents relates to the theory that the events surrounding the plant upset on the day of the explosion provided the source of fuel. See 26 R. at 18-20, 22, 64 (testimony of Justiss' expert, H.G. Nebeker). Because Justiss conceded this theory was implausible at oral argument, we see neither relevance to the contents of these documents, nor reversible error in Kerr-McGee's failure to produce them.

Also, Justiss relied on the testimony of Marvin Avant, a vacuum truck driver for Hollingsworth Construction, to assert that Kerr-McGee had Tank 29 vacuumed shortly after the fire to dispose of the remaining sludge and to prevent further evaluation of its explosive tendency. Avant testified that he recalled vacuuming sludge containing large amounts of oil from Tank 29 on March 13, 1990, just two days after the accident. When queried by Judge Walter, however, he indicated that his efforts at Tank 29 occurred more like a week after the explosion. 23 R. at 188. Additionally, Kerr-McGee contradicted Avant's testimony with that of George Jenkins, a contract laborer at the refinery in 1990 with whom Avant stated he frequently worked. Jenkins testified that he and Avant worked together all day on March 13, 1990, at places in the refinery other than Tank 29. This testimony was corroborated by Jenkins' time ticket for March 13, 1990, (Def.'s Ex. 36) and Avant's testimony that he recalled working with Jenkins on that date (23 R. at 186-87).

E.M.T. John Byrd's testimony, taken in context with the circumstances surrounding the explosion, establishes a sufficient evidentiary basis to support the district court's inference that gasoline was present in Tank 29. Under examination by Justiss' counsel, Byrd testified as follows:

Q: You do specifically recall questioning [McKelvey] about what he would want to be doing carrying gas in the tank, correct?

A: Yes, Ma'am.

* * *

Q: Did you phrase your questions in what [sic] terms of what the hell?

A: I asked him -- When he said -- He told me that -- My answer -- He told me that I came out to get a gas can. I said, sir, what in the hell would want to make you carry gas in a tank for?

The Court: What was his response?

The Witness: His response was that's what we were cleaning our saws and saw blades with, your honor.

* * *

The Court: He didn't -- He didn't tell you whether they had previously brought gasoline in there or not; is that right?

The Witness: Only thing he said in that regard, your honor, is that's what we were using to clean the gum off our saws.

The Court: As I understand your testimony it went like this. He told you he was going to get gasoline and you said what the hell would you bring gasoline in there for and he said that's what we -- were, past tense? That's what we were cleaning saws and saw blades?

The Witness: That's what we were cleaning our saws and saw blades with.

The Court: To get rid of the gunk?

The Witness: To get rid of the gunk, that was his exact words.

The Court: That's it?

The Witness: That's it.

26 R. at 187-89.

This testimony is supported by McKelvey's own testimony that the saws and equipment used to dismantle the roof were never removed from the tank, even at the end of a workday; that the saws being used were designed to cut wood not metal and were burning up at a rate of at least one a day; that on the days prior to the explosion, he had gone to a nearby hardware store to purchase replacement saws; that because the day of the explosion was a Sunday, he assumed this store was closed so replacement saws could not be purchased; and that throughout the job he regularly siphoned gasoline from his truck to fuel the generator that powered the tools, and in fact was returning to his truck to siphon more gasoline at the time of the explosion and flash fire. Additionally, James Starkey, owner of Bayou Ambulance Service and a volunteer fireman on the scene, testified that he had a saw passed out of the tank through the side man way to him "with a lot of gunk on it." 26 R. at 163. Starkey's statement as to the "gunk" is corroborated by a photograph of one of the saws removed from Tank 29 that displays the saw engulfed in some substance and the testimony of a Kerr-McGee investigator that the saws he viewed appeared "covered with a black, dirty substance." See Def.'s Ex. 58-1026; Pl.'s Ex. 235 at 89. Finally, E.M.T. Rita Byrd, who responded to the scene with her husband, John Byrd, corroborated her husband's testimony that McKelvey repeatedly told them what the crew was doing in Tank 29 was "damned stupid." 26 R. at 190, 195 (testimony of John Byrd); 26 R. at 199, 20 (testimony of Rita Byrd). Armed with McKelvey's testimony, and the testimony of

unbiased witnesses such as James Starkey and the Byrds, the district court had more than a sufficient factual basis from which to infer that gasoline had been brought into Tank 29 by the Justiss crew on the day of the explosion and flash fire.

The credibility of this conclusion increases when one considers that the record establishes that the Justiss crew worked for at least three days without incident. On those previous days, the crew stirred around in the sludge, cut and dismantled the floating roof, operated their tools and extension cords so as to generate sparks, and disengaged the ventilation fan two to three times a day for up to thirty minutes at a time to remove pieces of the roof from the tank. Why then did not an explosion or fire occur earlier if residual hydrocarbons escaping from the sludge were the fuel source? The logical conclusion is that something changed. The agitation of the sludge was no different. The evidence, however, suggests, for the first time, the impetus to introduce gasoline into the tank environment on that Sunday to keep the irreplaceable saws operational.¹⁶

¹⁶ The only other alteration to Tank 29's environment or the work procedures employed by the Justiss crew was the reversal of the direction of the ventilation fan, such that it was now blowing into the tank instead of suctioning air out. Dr. Otha J. Jacobus, Kerr-McGee's expert witness, testified that having the fan blow into Tank 29 from the side man way at the bottom of the tank was highly dangerous. Because hydrocarbon vapors are heavier than air and thus low-lying in the tank, blowing air into the tank only served to accelerate the speed at which these vapors would mix with the tank's atmosphere and produce an extremely volatile condition. 27 R. at 246-47; 28 R. at 37. The parties stipulated in the Pretrial Order that the Justiss crew was responsible for reversing the fan. 7 R. at 1257.

The evidence also refutes Justiss' remaining contentions. First, is Justiss' assertion that the expert testimony concerning the source of fuel weighs in its favor. Kerr-McGee's expert, Dr. Otha J. Jacobus,¹⁷ testified that a small quantity of gasoline, i.e., less than a quart, was consistent with the type of fire that occurred in Tank 29.¹⁸ 27 R. at 230-31. Dr. Jacobus also testified that Nebeker's theory of hydrocarbons in the sludge was scientifically unsupportable. 27 R. at 229. Finally, Nebeker

¹⁷ Dr. Jacobus holds a Ph.D. in organic chemistry, which he defined as "the study of molecules comprised principally of carbon and hydrogen." 27 R. at 199. He taught college courses focusing on organic chemistry for almost twenty (20) years, belongs to numerous research organizations in this field, and has published and lectured extensively in the area. Dr. Jacobus has qualified as an expert in over twenty (20) states and in several federal courts, including the Western District of Louisiana. He has conducted a number of investigations into chemical fires and explosions, is intimately familiar with the OSHA regulations on confined space entry procedures, and is capable of testifying as to the proper methods of cleaning oil storage tanks. He is a chemist with expertise in "chemical synthesis, analysis, chemical fires and explosions, natural gas explosions, natural gas odorants and products liability." Id. at 202.

H.G. Nebeker was tendered by Justiss as an expert in "refinery operations, refinery operating protocols, industry standards insofar as refinery operations and protocols are concerned as well [as] the economic evaluation of refinery equipment." 25 R. at 222. On cross-examination concerning his expertise, Nebeker admitted: His company is not in the accident investigation business. In his nine years with the company he has consulted on only two or three accident investigations. He has never consulted in a refinery explosion. He is not an expert in flash points, nor the vapor concentration necessary to fuel an explosion. He is not a chemist, nor an expert in chemical analysis. He is not an expert in L.E.L. readings, tank cleaning, tank monitoring, or tank ventilation. 25 R. at 225-32.

¹⁸ Dr. Jacobus did testify that he considered two possible sources of fuel to be likely: gasoline or some other cleaning agent carried in by the Justiss crew or vapors entrapped within some entity in the tank. 27 R. at 230. When asked by Judge Walter which source he deemed most likely, Dr. Jacobus responded they were "equally likely." 28 R. at 38.

acknowledged that the sludge samples he reviewed were inconclusive as to whether the sludge fueled the fire because they were taken after the fire, and that gasoline could have been a possible fuel source. 26 R. at 83, 88. Thus, the expert testimony is at least equally weighted.

Additionally, the evidence offers an explanation of the failure to find a vessel in which the gasoline was transported into the tank. Dr. Jacobus stated that if something like a plastic bottle or cup had been used, it most probably would have been saturated with the gasoline and fully consumed by the fire.

Finally, the evidence supports the finding that Kerr-McGee properly cleaned Tank 29. Dr. Jacobus testified that the procedures followed by Kerr-McGee satisfied all applicable industry standards, that Kerr-McGee's efforts were effective despite the collapsed floating roof, and that the alternative procedures suggested by Nebeker were not only unnecessary, but also infeasible and potentially dangerous.

With this evidence of fuel source before him, Judge Walter found:

[H]ere is what I think happened on March 11, 1990. The Baker Tank crew entered a gas free tank, 8 percent L.E.L. on that Sunday morning. They used Skill [sic] saws throughout the day. These saws were designed for cutting wood. The extension cords were not secured from possible submersion in the liquid sludge. Throughout the week these saws had ceased to function, either burned out or failed in some manner necessitating replacement. Two saws being purchased on March 6, a replacement saw on March 89 [sic], another replacement saw on March 10. The gunk and sludge in the B.S. and W. apparently clogged the saws causing the problem. On Sunday the saws probably became inoperable again. It was Sunday. As Mr. McElvey [sic] said, they couldn't purchase new saws. I believe they used gasoline in the tank to clean the saw

blades. There were gasoline vapors present in the tank. The ventilator fan was turned off for 15 minutes approximately and then turned on before the men re-entered the tank. Blowing in, the fan merely mixed the vapors with the tank air. Whether from the Skill [sic] saw sparks, if they had time to get to use them or from an extension cord shortage as has been suggested or a lighted cigarette, the vapors ignited killing all three Baker Tank men crew members in the tank. This finding is obviously dependent on which McElvey [sic] story I believe. That told to the E.M.S. workers or that expressed to OSHA representatives and indeed in this court.

The E.M.S. workers had no reason to lie. The story makes sense. And frankly accepting the rescue workers['] [sic] or E.M.S. workers['] [sic] version of what McElvey's [sic] admission was explains all. It is true Kerr-McGee was obligated by the terms of the contract to provide and maintain a clean and gas free working environment. The hot work permit warranted that a specific L.E.L. reading had been obtained. Baker Tank could have reasonably relied on those hot work permits to represent that hydrocarbons had not been released into the tank by any foreseeable means such as seepage, back flows, seepage from the pontoons, [or] slop to the tank. But that duty did not include responsibility for hazardous, reckless behavior by the [Baker] Tank crew which raised the L.E.L. percentages. . . .

. . . Under any of [Justiss' several scenarios suggesting how Kerr-McGee's conduct caused the fire], hydrocarbons could have reached dangerous levels but [Kerr-McGee's] version is more persuasive. There was no breach. But for the gasoline in the tank, the tank would have been gas free. Baker Tank sent a crew that was completely untrained, unfamiliar with the work at hand, the dangers involved or proper precautions. Once on the job, the Baker Tank crew acted in a manner that virtually insured an accident. . . . Mr. McElvey [sic] knew one thing and one thing only. He had in his hand a hot work permit and that was all he felt he had to know. He should have also known he couldn't bring gasoline in there.

. . . It was Baker Tank's conduct that caused the explosion and resultant loss of life.

28 R. at 71-75. Thus, Judge Walter's finding that gasoline introduced into the tank by the Baker Tank crew provided the fuel source resulted from his weighing the evidence and electing to credit the proponents of this theory.

In a non-jury trial, credibility choices and the resolution of conflicting testimony remain the province of the judge, subject

only to Rule 52(a)'s clearly erroneous standard. Gifford v. National Gypsum Co., 753 F.2d 1345 (5th Cir. 1985). Thus, "when a trial judge's finding is based on his decision to credit the testimony of one of two or more witnesses, each of whom has told a coherent and facially plausible story that is not contradicted by extrinsic evidence, that finding, if not internally inconsistent, can virtually never be clear error." Anderson, 470 U.S. at 575, 105 S.Ct. at 1512. See also Port Arthur Towing Co. v. John W. Towing, Inc. (In re Complaint of Port Arthur Towing Co.), 42 F.3d 312 (5th Cir.), cert. denied sub nom. Jarreau v. Port Arthur Towing Co., No. 94-2122, 1995 WL 388028 (Oct. 2, 1995). Additionally, our jurisprudence has held that the burden upon an appellant attempting to show clear error "is especially strong where the findings are primarily based upon oral testimony and the [district] judge has viewed the demeanor and judged the credibility of the witnesses." Bryan v. Kershaw, 366 F.2d 497, 499 (5th Cir. 1966), cert. denied sub nom. Bryan v. Kershaw Mfg. Co., 386 U.S. 959, 87 S.Ct. 1030 (1967). See also 9A Charles A. Wright & Arthur R. Miller, Federal Practice and Procedure § 2586 & n.5 (1995). Accordingly, the district court's factual findings "come here well armed with the buckler and shield" of the clearly erroneous standard embodied in Rule 52(a). Machinery Rental, Inc. v. Herpel (In re Multiponics, Inc.), 622 F.2d 709, 723 (5th Cir. 1980) (quoting Horton v. United States Steel Corp., 286 F.2d 710, 713 (5th Cir. 1961)). Thus, a review of the entire record in this case does not leave us with a "definite and firm conviction that a mistake has been committed,"

and so we cannot say Judge Walter's finding as to the source of fuel was clearly erroneous.

III. Error Five

As to the fifth error alleged, Justiss failed to develop its argument that the law of contract was not followed and applied by the district court. This error is mentioned only in the Statement of Issues section of Justiss' brief. When an appellant fails to advance arguments in the body of its brief in support of an issue it has raised on appeal, we consider such issues abandoned. See Gann v. Fruehauf Corp., 52 F.3d 1320, 1328 (5th Cir. 1995); Green v. State Bar of Texas, 27 F.3d 1083, 1089 (5th Cir. 1994). Accordingly, we decline to address the merits of this issue.

IV. Conclusion

For the foregoing reasons, the decision of the district court is AFFIRMED.

DENNIS, Circuit Judge, dissenting.

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I respectfully dissent.

The trial court committed an error of law by its evident assumption or determination that Kerr McGee owed no legal duty to Justiss or its workers to protect them from the obvious unreasonable risks of harm that were involved in the conditions under which Justiss was proceeding to install a new floating roof in Kerr McGee's crude oil storage tank. The law is well settled in

Louisiana and elsewhere that a person is required to realize that there will be a certain amount of negligence in the world, and when the risk becomes serious, either because the threatened harm is great, or because there is an especial likelihood that it will occur, reasonable care may demand precautions against an unreasonable risk of harm to another through the negligent or reckless conduct of the other or a third person. *Levi v. S.W. La. Elec. Membership Co-Op (SLEMCO)*, 542 So.2d 1081, 1084 (La. 1989); *Weaver v. Valley Elec. Membership Co-Op*, 615 So.2d 1375, 1383 (La. Ct.App. 1993); *Davis v. La. Power & Light Co.*, 612 So.2d 235, 236 (La.Ct.App. 1992), writ denied, 615 So.2d 336 (1993); *Graves v. Lou Ana Foods, Inc.*, 604 So.2d 150, 159 (La.Ct. App. 1992); *Putt v. Daussat*, 381 So.2d 955 (La.Ct.App. 1980); *Dragotis v. Kennedy*, 250 N.W. 804 (Minn. 1933); *Murphy v. Great Northern R. Co*, 2 Ir. Rep. 301 (1897).

This basic principle of tort law is elaborated upon in the authorities cited with approval in *Levi v. SLEMCO, supra*. For example, Prosser and Keeton on Torts explains:

In general, where the risk is relatively slight, a person is free to proceed upon the assumption that other people will exercise proper care But when the risk becomes a serious one, either because the threatened harm is great, or because there is an especial likelihood that it will occur, reasonable care may demand precautions against "that occasional negligence which is one of the ordinary incidents of human life and therefore to be anticipated." "It is not due care to depend upon the exercise of care by another when such reliance is accompanied by obvious danger."

The duty to take precautions against the negligence of others thus involves merely the usual process of

multiplying the probability that such negligence will occur by the magnitude of the harm likely to result if it does, and weighing the result against the burden upon the defendant of exercising such care. The duty arises, in other words, only where a reasonable person would recognize the existence of an unreasonable risk of harm to others through the intervention of such negligence. It becomes most obvious when the actor has reason to know that he is dealing with persons whose characteristics make it especially likely that they will do unreasonable things.

W. Page Keeton et al., *Prosser and Keeton on the Law of Torts* § 33, at 198-99 (5th ed. 1984)(footnotes and citations omitted).

The Second Restatement of Torts provides that "[a]n act or an omission may be negligent if the actor realizes or should realize that it involves an unreasonable risk of harm to another through the negligent or reckless conduct of the other or a third person." Restatement (Second) of Torts § 302A (1984). The comments under this section are similar to those of Prosser and Keeton. Significantly, comment c. states:

As stated in § 290, the actor is required to know the common qualities and habits of human beings, in so far as they are a matter of common knowledge in the community. The actor may have special knowledge of the qualities and habits of a particular individual, over and above the minimum he is required to know, or he may have special warning that the individual is or is about to be negligent or reckless in the particular case.

Id., cmt. c. (quoted in pertinent part).

In the present case, Kerr McGee, particularly with its superior knowledge, skill and experience in the storage and refining of crude oil, should have recognized that the circumstances and conditions under which the Justiss crew was proceeding to install a new floating roof in the refinery company's crude oil storage tank involved an unreasonable risk of a conflagration in a refinery endangering its own workers, the Justiss employees and the public. The trial court described those conditions and circumstances:

They used skill saws throughout the day. These saws were designed for cutting wood. The extension cords were not secured from possible submersion in the liquid sludge. Throughout the week these saws had ceased to function, either burned out or failed in some manner necessitating replacement The gunk and sludge in the B.S. and W. [a]pparently clogged the saws causing this problem Whether from the skill saw sparks, if they had time to get to use them or from an extension cord shortage as has been suggested or a lighted cigarette, the vapors ignited killing all three Baker Tank [a division of Justiss] crew members in the tank

Baker Tank sent a crew that was completely untrained, unfamiliar with the work at hand, the dangers involved or proper precautions. Once on the job, the Baker Tank crew acted in a manner that virtually insured an accident. Three of the members had little, if any, prior training in confined space work. The crew used skill saws designed for wood use, they used gasoline to clean the saws and blades. They used unsecured electrical extension cords

I must say no one covered themselves in glory as far as following simple -- Heck, following their own safety regulations.

ER 6 (Oral Ruling of July 11, 1994).

The Justiss employees worked with the obviously hazardous jerry-built electrical system in Kerr McGee's crude oil storage

tank containing hydrocarbon residue located within the Kerr McGee refinery for several days prior to the accident. During this time the tank work site was inspected regularly and was continuously subject to inspection by Kerr McGee employees. Consequently, Kerr McGee knew or should have known that there was a serious risk of a detonation or a conflagration caused by sparks from the skill saws, the wiring or the extension connection boxes. The Baker crew left its equipment in the tank overnight; the Kerr McGee inspection crew could not have missed the electrical set-up or the type of equipment that was being used in a tank considered dangerous enough to sniff for gas fumes daily. Because the threatened harm was great and there was an especial likelihood it would occur--as the trial court put it, the circumstances "virtually insured an accident" (ER 6)--reasonable care demanded that Kerr McGee take additional precautions against the kind of accident that happened by requiring safer work procedures, more frequent inspections of the work site and monitoring of the Justiss crew's work habits and equipment. In fact, Kerr McGee owed this duty not only to the Justiss employees but also to its own workers and the public as part of its duty of reasonable care as a prudent oil refinery operator.

The trial court evidently concluded that Kerr McGee owed no duty to take precautions against any risk that might take effect through a victim's negligence. Instead, the trial court was of the view that Kerr McGee was only under a duty imposed by contract to sniff or test the air of the tank each morning to insure that it

was sufficiently free of gases to permit electrical work at that time. The trial court thus erred as matter of law in not recognizing and applying the law of Louisiana which imposes a delictual duty to realize there will be a certain amount of negligence in the world and to take precautions against an unreasonable risk through the negligent or reckless conduct of a victim or third person when the threatened harm is great or there is an especial likelihood that it will occur. Consequently, the trial court further fell into legal error in not considering to what extent Kerr McGee may have been at fault delictually and in not proceeding to quantify the degree or percentage of comparative negligence attributable to each party. La. Civ. Code Ann. art 2323 (1995).+* The judgments of the trial court should be vacated and the case should be remanded to it for the application of the correct principles of law.