

UNITED STATES DISTRICT COURT
DISTRICT OF MINNESOTA

Southern Minnesota Beet Sugar
Cooperative,

Case No. 17-cv-5552 (WMW/BRT)

Plaintiff,

v.

**ORDER GRANTING DEFENDANT'S
MOTION TO EXCLUDE EXPERT
TESTIMONY**

Agri Systems, *doing business as*
ASI Industrial, Inc.,

Defendant.

Defendant Agri Systems, doing business as ASI Industrial, Inc. (ASI), moves to exclude the testimony of Plaintiff Southern Minnesota Beet Sugar Cooperative's (SMBSC) expert witness David Hallman. (Dkt. 44.) For the reasons addressed herein, ASI's motion is granted.

BACKGROUND

SMBSC is a Minnesota cooperative that processes sugar beets for sugar production. ASI is a Montana corporation that designs and constructs agricultural storage and processing facilities. In 2014, SMBSC and ASI entered into a contract, the Design-Build Agreement (Agreement), for ASI to design and construct six sugar-storage silos for SMBSC. The purpose of the silos was storage of the sugar, but another essential feature was the ability to empty the sugar from the silos. The device used to remove the stored sugar is a reclaimer. This device stirs the stored sugar so as to pull the sugar from the perimeter of the silo into the center so that the sugar flows out of the silo during the

emptying process. The reclaimer system that ASI designed included a platform near the top of the silos, a drive system, a rail-and-trolley system from which the reclaimer hangs, and an auger system that rotates around the interior of the silo while stirring sugar toward the center of the silo.

The original reclaimer design that ASI contemplated used three trolleys per reclaimer. Through each trolley was a large bolt that was perpendicular to the direction the reclaimer traveled. However, the trolleys that ASI selected for the reclaimer system included a pin, rather than a bolt, through the middle of each trolley. The bolt was secured by a cotter pin on each end. The pin in the trolley was parallel, rather than perpendicular, to the reclaimer's direction of travel. ASI completed the silo project during the summer or autumn of 2015. On December 30, 2015, in one of the six new silos, ASI's reclaimer system fell to the bottom of the silo. A cotter pin sheared, causing a trolley to separate from its track, and Steve Bjordahl, an ASI engineer, opined in an email to his colleagues about the parallel-oriented pin system:

I think the pin that the gantry hangs from is oriented the wrong way. If the pin axis was perpendicular to the direction of travel, then we wouldn't be relying on scissor plates bending in the weak direction and the cotter pins pressing against the scissor plates. When the trolley hangs up, we're using the pin in a way it wasn't intended to apply the force needed to drag the trolley. It's bass backwards.

Acknowledging that a cotter pin should never be load-bearing, ASI's expert, Dr. Gregory D. Williams, opined that "[s]omething shifted that shouldn't have shifted that caused the load on the cotter pin."

As a result of the reclaimer's failure, ASI reverted to a design similar to its original plan, redesigning the trolley configuration to include a large pin that is perpendicular to the direction of travel. At SMBSC's request, ASI's redesigned system included a mechanical "failsafe" to prevent another "catastrophic failure." ASI completed the first modification to the reclaimer system in or about April 2016. But the system failed again in November 2017 when bolts used to hold the sides of the trolley together sheared. ASI added additional bolts to the trolley to avoid another reclaimer failure.

SMBSC offers David Hallman as its expert to testify as to ASI's allegedly negligent design of the sugar-storage silos. Hallman's educational attainment includes a Bachelor of Science degree in mechanical engineering and a Master of Science degree in materials science and engineering. He is a licensed engineer in Minnesota and seven other states. Much of Hallman's professional experience is in automobile-crash investigation and reconstruction and fire investigation.¹ Hallman's work experience includes four years as a design engineer, in which he designed various mechanical structures and equipment. Hallman concedes that he has never performed any design work that did not involve a vehicle. But his experience includes evaluating and analyzing system loading, system

¹ Hallman's professional affiliations include the National Association of Fire Investigators, the Society of Automotive Engineers International, Accident Reconstruction Network, the Midwest Association of Technical Accident Investigators, Southwestern Association of Technical Accident Investigators, the National Association of Professional Accident Reconstructionists, American Society for Testing and Materials International, International Association of Arson Investigators, Article Peer Reviewer for Collision Magazine, the American Academy of Forensic Sciences, the Minnesota Society of Professional Engineers, and the National Society of Professional Engineers.

fatigue, system resonance, and system stresses and strains. And Hallman has developed safety factors based on predicted system loading.

Hallman completed four expert reports for this litigation. In his January 14, 2019 report, Hallman opines regarding both the standard of care and ASI's breach of that standard of care. Hallman explains that engineering design requires the applied loads to be calculated and accounted for using engineering calculations and that appropriate engineering calculations were not performed on the reclaimer system at issue here. ASI also did not undertake a Failure Mode and Effects Analysis (FMEA), which involves a review of failure modes, failure causes, and failure effects, Hallman concludes. Other failings identified by Hallman include that ASI ignored the warnings in the trolley manufacturer manual against using the trolleys for off-center loading, failed to consider accelerated wheel deformation and wear, and ignored plainly visible deformation to trolley parts that was evident in pictures and indicated overloading and misuse of the trolleys. According to Hallman, ASI inappropriately selected trolleys that were not intended for continuous movement. And ASI's claim that it accounted for improper engineering design by requesting SMBSC to limit control to the system is not a proper failsafe, Hallman opines, because a mechanical system should be designed to either withstand worst-case loading or have a mechanical failsafe.

In forming his opinions, Hallman reviewed photographs of the components, design and redesign drawings, trolley literature, multiple depositions, and other record evidence. He visited the site one time. But he concedes that he never examined the reclaimer system prior to the two modifications and has never observed an ASI-built reclaimer in operation.

Hallman also concedes that he did not test any component of the reclaimer system at any time. Nor did he observe the cotter pins that were installed before the collapse or inspect the bolt that sheered in November 2017.

In response to ASI's production of RISA software files, Hallman concludes in his second report that these files were a static structural analysis of the reclaimer system that does not account for system dynamic loading of the trolleys, which makes the analysis inadequate for system design. But Hallman subsequently acknowledged at his deposition that he has never used the RISA software and does not know how multiple iterations of a design are saved in the RISA files. Hallman viewed the RISA files on a demonstration version of the program. And although he has never used RISA software, he is familiar with ANSYS software and "assum[ed]" RISA works in the same manner.

Hallman completed his third report in response to the report of ASI's expert, Dr. Williams. Hallman criticizes several of Dr. Williams's opinions for a lack of evidentiary support. Hallman explains that many of the calculations that Dr. Williams performed were either inappropriate or inaccurate. But Hallman concedes that he did not perform any calculations himself. Hallman also rejects Dr. Williams's opinion that ASI met the professional standard of care established by the code of ethics of the National Society of Professional Engineers (NSPE) because ASI failed to follow two fundamental canons of professional engineering ethics. First, ASI failed to consider safety as its primary concern and, second, ASI designed a reclaimer system that was outside its area of engineering expertise.

Hallman released a supplemental report after all fact depositions were completed. In that report he concludes that the reclaimer system failed as a direct result of ASI's failure to follow engineering best practices and failure to conduct an appropriate systems analysis. Hallman did not define "engineering best practices" in any of his expert reports. But at his deposition, Hallman explained that the appropriate standard of performance is determined by the "canons of ethics" and the parties' Agreement. The Agreement provides: "All design and engineering and construction services and other Work of the Design-Builder shall be performed in accordance with (a) the Contract Documents, (b) all Legal Requirements, and (c) the professional standards applicable to the Work, buildings or work of complexity, quality and scope comparable to the Work." Hallman acknowledges that the NPSE code of ethics does not regulate engineers in Minnesota. But he maintains that engineers are "expected to follow" the NPSE code of ethics.

SMBSC commenced this lawsuit against ASI, alleging six causes of action.² ASI now moves the Court to exclude the expert testimony of Hallman.

ANALYSIS

The admissibility of expert testimony is governed by Federal Rule of Evidence 702 and *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993). Rule 702 provides:

² The Court has granted summary judgment in favor of ASI on SMBSC's void-contract claim. The Court also granted summary judgment in favor of ASI on SMBSC's product-defect claim as it is indistinguishable from the breach-of-contract claims. SMBSC's remaining claims include breach of contract, breach of express warranty, breach of implied warranty, and professional negligence.

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:

- (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
- (b) the testimony is based on sufficient facts or data;
- (c) the testimony is the product of reliable principles and methods; and
- (d) the expert has reliably applied the principles and methods to the facts of the case.

Fed. R. Evid. 702. The proponent of expert testimony must prove its admissibility by a preponderance of the evidence. *Lauzon v. Senco Prods., Inc.*, 270 F.3d 681, 686 (8th Cir. 2001). "Rule 702 reflects an attempt to liberalize the rules governing the admission of expert testimony" and favors admissibility over exclusion. *Id.* (internal quotation marks omitted).

A district court must ensure that testimony admitted under Rule 702 "is not only relevant, but reliable." *Daubert*, 509 U.S. at 589. "Engineering testimony rests upon scientific foundations, the reliability of which will be at issue in some cases." *Kuhmo Tire Co. v. Carmichael*, 526 U.S. 137, 150 (1999). The objective of the *Daubert* inquiry is to ensure that an expert, whether basing testimony upon professional studies or personal experience, employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field. *Id.* at 152. A district court may consider "whether the expertise was developed for litigation or naturally flowed from the expert's

research; whether the proposed expert ruled out other alternative explanations; and whether the proposed expert sufficiently connected the proposed testimony with the facts of the case.” *Sappington v. Skyjack, Inc.*, 512 F.3d 440, 449 (8th Cir. 2008) (internal quotation marks omitted). When weighing these factors, the district court must function as a gatekeeper to separate “expert opinion evidence based on ‘good grounds’ from subjective speculation that masquerades as scientific knowledge.” *Glastetter v. Novartis Pharm. Corp.*, 252 F.3d 986, 989 (8th Cir. 2001).

Expert testimony is not admissible if it is “speculative, unsupported by sufficient facts, or contrary to the facts of the case,” *Marmo v. Tyson Fresh Meats, Inc.*, 457 F.3d 748, 757 (8th Cir. 2006), such that it is “so fundamentally unsupported that it can offer no assistance to the jury,” *Minn. Supply Co. v. Raymond Corp.*, 472 F.3d 524, 544 (8th Cir. 2006) (internal quotation marks omitted). But disputes about the factual basis of an expert’s testimony ordinarily are issues of credibility, not admissibility, of the expert’s testimony. *Sappington*, 512 F.3d at 450; *see also Minn. Supply Co.*, 472 F.3d at 544. “Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.” *Daubert*, 509 U.S. at 596.

ASI moves to exclude Hallman’s testimony in its entirety because he is not a qualified expert. Alternatively, ASI seeks to exclude Hallman’s testimony concerning (1) any opinion outside the scope of Hallman’s expertise, (2) the applicable standard of care and whether ASI violated that standard, (3) any opinion based on the NSPE code of ethics, (4) any opinion based on Hallman’s interpretation of RISA software analysis files,

(5) any calculations that ASI performed, and (6) any opinion on the sufficiency of evidence or credibility of deposition testimony.

I. Hallman's Qualifications

ASI argues that Hallman is not qualified to testify as an expert in this case, which exclusively concerns the structural engineering and design of a silo reclaimer system, an area in which Hallman has no education or experience. ASI contends that, because all of Hallman's design experience involves vehicles, he cannot credibly testify regarding the design of the reclaimer system. But the fact that Hallman has extensive experience in crash investigations and fire investigations does not necessarily lead to the conclusion that Hallman is not qualified on matters in which he has less experience. Indeed, both Hallman and ASI's engineer responsible for the design of the reclaimer system and selection of the trolleys at issue have a degree in mechanical engineering.³ Moreover, although ASI attacks Hallman's credibility because he has never designed a reclaimer system, ASI's expert testified that it is not necessary to have designed a reclaimer system to be qualified to form opinions in this case.

An expert must be qualified to testify in a given subject area. But this requirement is not rigorous, and any gaps in an expert witness's qualifications or knowledge generally pertain to the weight of the testimony, not its admissibility. *United States ex rel. Johnson v. Golden Gate Nat'l Senior Care, LLC*, 223 F. Supp. 3d 882, 905 (D. Minn. 2016) (citing

³ Bjordahl, ASI's structural engineer, also worked on the silos. But Bjordahl's role involved structural needs. He had no involvement in designing the mechanical processes, and he acknowledged in his deposition testimony that the trolleys were not part of the structural drawings.

Am. Auto. Ins. Co. v. Omega Flex, Inc., 783 F.3d 720, 726 (8th Cir. 2015)). In this case, Hallman qualifies as an expert regarding the mechanical engineering applicable to the reclaimer system.

II. Hallman's Opinions

ASI argues that Hallman's opinions about the applicable standard of care and whether ASI violated that standard are fundamentally flawed and, therefore, inadmissible. ASI contends that Hallman's opinion on the issue is fundamentally flawed because Hallman cannot articulate the applicable standard of care and his opinion that the standard was violated is conclusory and circular.⁴ As a district court must determine at the outset whether the proffered expert testimony both rests on a reliable foundation and is relevant to the task at hand, *Daubert*, 509 U.S. at 597, the Court will begin with a review of the legal standard applicable to SMBSC's professional-negligence claim.

Engineers are not guarantors of results, nor does the law require perfect results. *Waldor Pump & Equip. Co. v. Orr-Schelen-Mayeron & Assoc's, Inc.*, 386 N.W.2d 375, 377 (Minn. Ct. App. 1986). The possibility of error is inescapable. *Id.* One who renders professional services has a duty to the recipient of those services to exercise such care, skill, and diligence as a person in that profession ordinarily exercises under like

⁴ ASI is critical of Hallman for referencing only the NSPE canons of ethics and asserts that Hallman's opinion on the standard of care must, but did not, consider the rules of professional conduct promulgated by the Minnesota Board of Architecture, Engineering, Land Surveying, Landscape Architecture, Geoscience, and Interior Design, codified in Minn. R. ch. 1805. ASI has not demonstrated that Minnesota's rules of professional conduct governing engineers are necessarily binding on ASI's engineers conducting their work outside of Minnesota.

circumstances. See *City of Eveleth v. Ruble*, 225 N.W.2d 521, 524 (1974) (addressing duty of design engineers in a professional-negligence action). Expert testimony is usually required to establish the prevailing standard of care as well as the consequences of departing from that standard. *Pond Hollow Homeowners Ass'n v. The Ryland Grp., Inc.*, 779 N.W.2d 920, 923 (Minn. Ct. App. 2010).

Hallman opines that ASI breached the applicable standard of care because (1) ASI failed to follow two fundamental canons of the NSPE code of ethics by failing to consider safety as ASI's primary concern and designing a reclaimer system that was outside ASI's expertise, (2) ASI failed to follow engineering best practices, and (3) ASI failed to conduct appropriate engineering calculations. When determining the admissibility of expert testimony, the germane inquiry is whether the testimony would assist the jury's understanding of the evidence. *J.B. Hunt Transp., Inc. v. Gen. Motors Corp.*, 243 F.3d 441, 444 (8th Cir. 2001).

SMBSC argues that there is no real dispute about causation, the "bass ackward" design, the feasibility of the additional "failsafe" that subsequently was installed, or the lack of quantification of lateral and operational loads. But even when Hallman's opinions are considered in this context, as SMBSC urges the Court to do, there is no explanation as to how Hallman's opinion on the standard of care would assist the jury in this case.

In *Pond Hollow*, the plaintiff's expert opined that the defendant engineering company breached the standard of care by failing "to properly recognize and evaluate the water table when determining the minimum building pad elevations." 779 N.W.2d at 923. The Minnesota Court of Appeals concluded that plaintiff's expert failed to establish the

prevailing standard of care because the expert did not explain how a proper evaluation or recognition is performed. Hallman opines that engineering design requires that applied loads be calculated and accounted for using engineering calculations. He then critiques Dr. Williams's calculations. But Hallman does not explain how a proper calculation is performed and concedes that he did not perform a single calculation for himself pertaining to this case. Consequently, even if Hallman's opinion could establish the prevailing standard of care, it would offer no assistance to the jury's understanding of the consequences of any departure from that standard of care. *Id.* (explaining that expert testimony ordinarily must establish both the applicable standard of care *and* the consequences of departing from that standard in professional negligence claims).

Hallman's opinions on engineering best practices also would be of no assistance to the jury. Much like the opinion in *MCI Communications, Inc. v. Maverick Cutting & Breaking LLC*, Hallman's proffered testimony would not serve as evidence from which a jury could discern the industry standard of care applicable to the engineering work performed. 374 F. Supp. 3d 789, 808 (D. Minn. 2019). There, the plaintiff's expert offered several opinions as to industry best practices, but the district court concluded that industry best practices are not the same as industry standards of care. *Id.* Instead, industry best practices are aspirational and generally prescribe a higher standard of care than the industry standard of care. *Id.* Because the plaintiff's expert failed to reference industry practices or guidelines specific to the particular engineer's duty, and instead based his opinion primarily on his own point of view of best practices, the proffered expert opinion was insufficient to establish industry standards of care. *Id.* Such is the case here. Hallman's

opinion on the standard of care is based primarily—if not entirely—on Hallman’s own point of view. Something other than rank conjecture and personal preference are required. *Medalen v. Tiger Drylac U.S.A., Inc.*, 269 F. Supp. 2d 1118, 1135 (D. Minn. 2003) (“[N]othing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data by the ipse dixit of the expert.” (quoting *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997))).

The remainder of Hallman’s proffered testimony, regarding issues other than those concerning the standard of care, also is flawed. The primary basis for assessing admissibility of expert testimony is the witness’s methodology rather than conclusions. *Bonner v. ISP Techs., Inc.*, 259 F.3d 924, 929 (8th Cir. 2001) (“Both our cases and the decisions of the Supreme Court make clear that it is the expert witnesses’ methodology, rather than their conclusions, that is the primary concern of Rule 702.”). Hallman claims to have followed the “Scientific Method of Inquiry” as defined in the National Fire Protection Association’s Guide for Fire and Explosion Investigations as:

The systematic pursuit of knowledge involving the recognition and definition of a problem; the collection of data through observation and experimentation; analysis of the data; the formulation, evaluation and testing of hypotheses; and, where possible, the selection of a final hypothesis.

But Hallman failed to follow the scientific methodology that he advocates. *Cf. Presley v. Lakewood Eng’g & Mfg. Co.*, 553 F.3d 638, 646 (8th Cir. 2009) (affirming exclusion of expert testimony under such circumstances). Hallman did not pursue *any* methodology in this case to convince the Court that his opinions are reliable. For example, in response to ASI’s consideration of substituting harder wheels on the trolley, Hallman opined that this

would not be an adequate solution. He subsequently conceded, “I have not done the analysis to determine what should have been done.”

The objective of the *Daubert* inquiry “is to make certain that an expert, whether basing testimony upon professional studies or personal experience, employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field.” *Kumho Tire*, 526 U.S. at 152. Hallman does not employ the same level of intellectual rigor that characterizes the practice of design engineering. Hallman maintains that ASI failed to perform necessary calculations, but he did not perform any calculations himself. Hallman has never designed a reclaimer or any similar machine. Hallman did not test or personally observe any of the component parts. After admitting that he was unsure whether it was common to use cotter pins in trolleys, Hallman conceded that he did not identify or even investigate whether other trolley options were more suitable than the trolley that ASI chose. This is so even as trolleys designed by companies other than ASI were in use at SMBSC. When pressed on the basis for his opinion that the selected trolley was not capable of supporting the load required for the system to function, Hallman maintained that the trolley was improper simply because it failed. And this is so despite SMBSC’s operation of the same trolley in other silos.

Without any scientifically reliable methods supporting his opinions, Hallman’s proposed testimony falls short of the threshold requirements for admissibility. *See Adams v. Toyota Motor Corp.*, 867 F.3d 903, 916 (8th Cir. 2017) (expert opinions consisting of only “vague theorizing based on general principals” do not satisfy the Rule 702 standards for admissibility); *Barrett v. Rhodia, Inc.*, 606 F.3d 975, 983 (8th Cir. 2010) (concluding

that district court did not abuse its discretion by excluding expert testimony based primarily on assumptions instead of testing, measurement, or scientific analysis); *Weisgram v. Marley Co.*, 169 F.3d 514, 521 (8th Cir. 1999) (holding that the district court abused its discretion by admitting testimony that was not scientifically sound when the expert observed the allegedly defective product at issue but had very limited experience with the product). The Court therefore excludes Hallman's proffered testimony on behalf of SMBSC in its entirety.⁵

ORDER

Based on the foregoing analysis and all the files, records and proceedings herein, **IT IS HEREBY ORDERED** that ASI's motion to exclude expert testimony, (Dkt. 44), is **GRANTED**.

Dated: August 31, 2020

s/Wilhelmina M. Wright
Wilhelmina M. Wright
United States District Judge

⁵ ASI argues that, if the Court excludes Hallman as an expert, ASI is entitled to judgment as a matter of law on SMBSC's professional-negligence, breach-of-express-warranty, and breach-of-implied-warranty claims. ASI filed the instant motion nearly seven months after the dispositive-motion deadline set forth in the scheduling order. ASI's request for judgment as a matter of law is untimely under the scheduling order and premature under Federal Rule of Civil Procedure 50(a). *See Reeves v. Sanderson Plumbing Prods., Inc.*, 530 U.S. 133, 149 (2000) (stating that under Rule 50, Fed. R. Civ. P., a district court should render judgment as a matter of law when "*a party has been fully heard* on an issue and there is no legally sufficient evidentiary basis for a reasonable jury to find for that party on that issue." (internal quotation marks omitted) (emphasis added)); *accord McSherry v. City of Long Beach*, 423 F.3d 1015, 1019 (9th Cir. 2005) (concluding that pretrial use of Rule 50, Fed. R. Civ. P., was impermissible because the rule presumes that a jury trial has begun and the nonmoving party has finished presenting evidence).