

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

E. Roy Hawkens, Chairman
Dr. Michael F. Kennedy
Dr. William C. Burnett

In the Matter of

FLORIDA POWER & LIGHT COMPANY

(Turkey Point Units 6 and 7)

Docket Nos. 52-040-COL
and 52-041-COL

ASLBP No. 10-903-02-COL-BD01

April 21, 2016

MEMORANDUM AND ORDER

(Granting in Part and Denying in Part FPL's Motion for Summary Disposition)

Before this Board in this 10 C.F.R. Part 52 combined license (COL) proceeding is a motion for summary disposition of Contention 2.1 filed by Florida Power & Light Company (FPL).¹ Contention 2.1 contains two components in support of a claim that certain chemicals in the wastewater that FPL plans to discharge into the Boulder Zone of the Lower Floridan Aquifer will migrate to the Upper Floridan Aquifer and degrade drinking water supplies. First, the contention argues that the alleged concentrations of four particular chemicals in the wastewater are not accurate. Second, the contention argues that insufficient evidence supports the conclusion that these chemicals, inserted into the Boulder Zone by the proposed injection wells, will not migrate to the Upper Floridan Aquifer and adversely affect the groundwater.

For the reasons discussed below, we grant FPL's motion in part, concluding that there is no genuine issue of material fact regarding the first component of Contention 2.1. However, we

¹ See [FPL's] Motion for Summary Disposition of Joint Intervenors' Amended Contention 2.1 (Dec. 15, 2015) [hereinafter FPL Motion].

deny FPL's motion with regard to the second component, concluding that an evidentiary hearing is required to resolve disputed issues of material fact regarding the possibility that injected wastewater could migrate to, and adversely impact, the groundwater in the Upper Floridan Aquifer.

I. BACKGROUND

1. This proceeding concerns a challenge by Mark Oncavage, Dan Kipnis, Southern Alliance for Clean Energy, and National Parks Conservation Association (hereinafter "Joint Intervenors") to FPL's COL application for two new nuclear power reactors, Turkey Point Units 6 and 7, to be constructed at FPL's facility near Homestead, Florida.² In February 2011, this Board found that Joint Intervenors established standing to intervene in this proceeding and proffered one admissible contention, Contention 2.1. See LBP-11-06, 73 NRC 149, 190, 251-52 (2011). Joint Intervenors' Contention 2.1 is now the sole contention pending before the Board and reads as follows:³

The [Environmental Report (ER)] is deficient in concluding that the environmental impacts from FPL's proposed deep injection wells will be "small" because the chemical concentrations in ER Rev. 3 Table 3.6-2 for ethylbenzene, heptachlor, tetrachloroethylene, and toluene may be inaccurate and unreliable. Accurate and reliable calculations of the concentrations of those chemicals in the wastewater are necessary so it might reasonably be concluded that those chemicals will not adversely impact the groundwater should they migrate from the Boulder Zone to the Upper Floridan Aquifer.

² See [Joint Intervenors'] Petition for Intervention (Aug. 17, 2010); [FPL, COL] Application for the Turkey Point Units 6 & 7, Notice of Hearing, Opportunity to Petition for Leave to Intervene and Associated Order Imposing Procedures for Access to Sensitive Unclassified Non-Safeguards Information and Safeguards Information for Contention Preparation, 75 Fed. Reg. 34,777 (June 18, 2010).

³ In May 2012, we admitted an amended version of Contention 2.1, see LBP-12-09, 75 NRC 615, 629 (2012), and in August 2012, we reformulated it to eliminate an issue that had been rendered moot. See Licensing Board Memorandum and Order (Granting in Part and Denying in Part Motion for Summary Disposition of Amended Contention 2.1) (Aug. 30, 2012) at 10 (unpublished).

LBP-15-19, 81 NRC 815, 822 (2015). Contention 2.1 thus challenges (1) the accuracy and reliability of the chemical concentrations for ethylbenzene, heptachlor, tetrachloroethylene, and toluene found in ER Rev. 3 Table 3.6-2; and (2) FPL's conclusion that these chemicals, inserted into the 3,000-feet-deep Boulder Zone by the proposed injection wells, will not migrate upward to the 1,500-feet-deep Upper Floridan Aquifer and adversely affect the groundwater. See LBP-12-09, 75 NRC at 628-29 & nn.20-21; infra note 26 (discussing hydrogeology at the Turkey Point site).⁴

In February 2015, the NRC Staff published the Draft Environmental Impact Statement (DEIS) for Turkey Point Units 6 and 7.⁵ The NRC Staff's "preliminary recommendation to the Commission related to the environmental aspects of [FPL's COL request] is that the COLs should be issued." DEIS at 10-27.

With respect to the challenged chemical concentrations in ER Rev. 3 Table 3.6-2, the DEIS incorporates the data from FPL's ER into DEIS Table 3-5. See DEIS, tbl. 3-5, at 3-38 to 3-39. As to the migration issue, the DEIS explains the relevant hydrogeology as follows:

The Floridan Aquifer system consists of three units which are, from shallowest to deepest[,] the Upper Floridan Aquifer, a less permeable formation known as the Middle Confining Unit (MCU),^[6] and the Lower Floridan Aquifer. . . . Within the

⁴ Contention 2.1 contained these two components from the outset. When we admitted this contention in 2011, we stated that Joint Intervenors had asserted that these "specified chemicals might be in the wastewater discharged via deep injection wells into the Boulder Zone of the Lower Floridan Aquifer, and that the wastewater could possibly migrate into the upper Floridan Aquifer, contaminating the groundwater (including potential drinking water) with these chemicals." LBP-11-06, 73 NRC at 191; see also id. at 193.

⁵ See Division of New Reactor Licensing, Office of New Reactors, Environmental Impact Statement for [COLs] for Turkey Point Nuclear Plant Units 6 and 7 Draft Report for Comment, NUREG-2176 (Feb. 2015) (ADAMS Accession Nos. ML15055A103, ML 5055A109) [hereinafter DEIS].

⁶ The NRC Staff notes that it uses different terminology than FPL to refer to the "assemblage of formations between the Upper Floridan Aquifer and Lower Floridan Aquifer." NRC Staff Answer to [FPL's] Motion for Summary Disposition of Joint Intervenors' Amended Contention 2.1 (Feb. 3, 2016) at 10 [hereinafter Staff Answer]. While FPL refers to this assemblage as both the Middle Floridan Aquifer and Middle Floridan Confining Unit, the NRC Staff refers to it as the

Lower Floridan Aquifer in southern Florida there is a cavernous, high-permeability geologic horizon called the Boulder Zone, which is the zone identified for deep-well injection of blowdown water from proposed Units 6 and 7.

Id. at 2-53. According to the DEIS, “the overlying [Middle Confining Unit] . . . separates the Boulder Zone from the [Underground Source of Drinking Water⁷] zone within the Upper Floridan Aquifer.” Id. at 2-56. The DEIS goes on to note that “enhanced vertical flow through the confining units to the Upper Floridan Aquifer is extremely unlikely, and if leakage did occur it would be detected and mitigated as required by the [Florida Department of Environmental Protection Underground Injection Control Program].” Id. at 5-18. Consequently, the DEIS concludes that the environmental impacts of injecting up to 18.6 million gallons per day of wastewater into the Boulder Zone “would be SMALL.” Id. at 3-32, 5-29; accord id. at 5-87 to 5-89.

2. On December 15, 2015, FPL filed a motion requesting the Board to grant summary disposition of Contention 2.1. See FPL Motion at 1.⁸ In its motion, which was accompanied by three expert opinions,⁹ FPL claims that there is no genuine dispute that “the

Middle Confining Unit. See id.; FPL Motion at 13 n.64. In this decision, the Board will use the NRC Staff’s terminology, referring to the assemblage of formations as the Middle Confining Unit.

⁷ The DEIS defines the Underground Source of Drinking Water as “groundwater with less than 10,000 mg/L [total dissolved solids].” DEIS at 5-30.

⁸ See also FPL Motion, attach. 2, [FPL’s] Statement of Material Facts as to which No Genuine Issue Exists, in support of [FPL’s] Motion for Summary Disposition of Joint Intervenor’s Amended Contention 2.1 (Dec. 15, 2015) [hereinafter FPL’s Statement of Undisputed Material Facts].

⁹ The three expert opinions were provided by (1) the Quality Assurance and Quality Control Officer at FPL’s Central Laboratory, see FPL Motion, attach. 3, Declaration of Thomas Helton, Jr. in Support of [FPL’s] Motion for Summary Disposition of Joint Intervenor’s Amended Contention 2.1 (Dec. 14, 2015) [hereinafter FPL Helton Declaration]; (2) the President of McNabb Hydrogeologic Consulting, Inc., who is a licensed professional geologist, see FPL Motion, attach. 4, Declaration of David McNabb in Support of [FPL’s] Motion for Summary Disposition of Joint Intervenor’s Amended Contention 2.1 (Dec. 14, 2015) [hereinafter FPL McNabb Declaration]; and (3) the Principal Engineer at Environmental Consulting & Technology, Inc., who is a registered professional engineer, see FPL Motion, attach. 5, Declaration of Richard J. Powell in Support of [FPL’s] Motion for Summary Disposition of Joint Intervenor’s Amended Contention 2.1 (Dec. 11, 2015) [hereinafter FPL Powell Declaration]; FPL

data disclosed in the DEIS in Table 3-5 for the Constituents^[10] are conservative and reliable.” Id. at 7; see also id. at 7-12. FPL also asserts that “the concentration of the Constituents are irrelevant to the potential impacts on drinking water,” id. at 4, because, as stated in the DEIS, it is “extremely unlikely,” DEIS at 5-18, that chemicals from FPL’s deep well injection will migrate out of the Boulder Zone due to its “hydrogeological confinement, the design of the injection wells, and the [Florida Department of Environmental Protection’s] regulations requiring monitoring and mitigation.” FPL Motion at 4; see also id. at 13-24. FPL thus maintains that there is no genuine factual dispute regarding the DEIS conclusion that the environmental impacts from FPL’s deep well injection will be small, see id. at 13, and accordingly, FPL claims it is entitled to summary disposition as a matter of law. See id. at 25.

The NRC Staff agrees that FPL should be granted summary disposition, arguing that although several of FPL’s statements of undisputed material facts require clarifications and qualifications, no genuine issue exists with regard to facts that are material to Contention 2.1. See Staff Answer at 8. Specifically, the NRC Staff asserts that there can be no reasonable dispute that (1) the concentrations in Table 3-5 of the DEIS for the four chemicals are “sufficiently accurate and reliable”; and (2) in light of the confinement provided by the Middle Confining Unit, it is “extremely unlikely” that wastewater will migrate from the Boulder Zone to the Upper Floridan Aquifer. Id. at 13, 14. The NRC Staff filed the opinion of an expert in geology and hydrology to support its arguments.¹¹

Motion, attach. 5, Expert Report of Richard J. Powell (Dec. 14, 2015) [hereinafter FPL Powell Report].

¹⁰ In its motion, FPL refers to the four chemicals challenged in Contention 2.1—i.e., ethylbenzene, heptachlor, tetrachloroethylene, and toluene—collectively as the “Constituents.” See FPL Motion at 2.

¹¹ See Staff Answer, attach. 1, Affidavit of Daniel O. Barnhurst Concerning Amended Contention NEPA 2.1 (Feb. 3, 2016) [hereinafter NRC Barnhurst Aff.].

Joint Intervenor's oppose summary disposition.¹² Notably, they do not dispute FPL's statement that "the Constituent concentrations appearing in the ER and DEIS are conservative and reliable." FPL's Statement of Undisputed Material Facts ¶ 41.¹³ However, they rely on an affidavit from their expert, Mark Quarles, an environmental consultant and a licensed professional geologist, to dispute FPL's assertion that adequate confining layers exist to prevent vertical migration of wastewater from the Boulder Zone to the Upper Floridan Aquifer.¹⁴ Mr. Quarles also disagrees with FPL's assertion that the highly regulated design and testing of the injection wells will prevent leakage of wastewater that could contaminate the Upper Floridan Aquifer. See Third Quarles Aff. ¶¶ 43-44. Finally, Mr. Quarles asserts that the proposed monitoring and mitigation programs are inadequate to prevent or remediate contaminated groundwater because the sampling occurs too infrequently to detect the upward migration of wastewater before it has a chance to spread. See id. ¶¶ 39-48.¹⁵

¹² See Joint Intervenor's Answer to [FPL's] Motion for Summary Disposition of Joint Intervenor's Amended Contention 2.1 (Feb. 3, 2016) at 6-9 [hereinafter Joint Intervenor's Answer].

¹³ See Joint Intervenor's Answer, attach. 1, Joint Intervenor's Statement of Material Facts as to which a Genuine Issue Exists, in Support of Joint Intervenor's Answer to FPL's Motion for Summary Disposition of Joint Intervenor's Amended Contention 2.1 ¶ 9 [hereinafter Joint Intervenor's Statement of Material Facts].

¹⁴ See Joint Intervenor's Answer, attach. 2, Third Affidavit of Mark A. Quarles ¶¶ 22, 30-34, 37 (Feb. 2, 2016) [hereinafter Third Quarles Aff.].

¹⁵ On February 15, 2016, Joint Intervenor's filed a response to the NRC Staff's Answer. See Joint Intervenor's Response to NRC Staff's Answer to [FPL's] Motion for Summary Disposition of Joint Intervenor's Amended Contention 2.1 (Feb. 15, 2016). On February 16, 2016, Joint Intervenor's filed a motion asking that this Board either (1) admit the February 15 response as a matter of right pursuant to 10 C.F.R. §§ 2.710(a) and 2.1205(c); or (2) admit the response as a matter of adjudicative discretion. See Joint Intervenor's Motion for Leave to File Response to NRC Staff's Answer to [FPL's] Motion for Summary Disposition of Joint Intervenor's Amended Contention 2.1 (Feb. 16, 2016). Although no written oppositions were filed, Joint Intervenor's represent that FPL and the NRC Staff oppose the motion. See id. at 7-8. As a matter of discretion, we grant Joint Intervenor's motion and admit their response. We conclude, however, that it advances no facts or arguments that are material to our decision.

On April 5, 2016, this Board held oral argument on FPL's motion.¹⁶

II. APPLICABLE LEGAL STANDARD

Pursuant to NRC regulations, a motion for summary disposition may be granted if “there is no genuine issue as to any material fact and . . . the moving party is entitled to a decision as a matter of law.” 10 C.F.R. § 2.710(d)(2); see also id. § 2.1205(c) (stating that the standards for summary adjudication set forth in section 2.710 apply to Subpart L proceedings). The NRC standards governing summary disposition “are based upon those the federal courts apply to motions for summary judgment under Rule 56 of the Federal Rules of Civil Procedure.” Entergy Nuclear Generation Co. & Entergy Nuclear Operations, Inc. (Pilgrim Nuclear Power Station), CLI-10-11, 71 NRC 287, 297 (2010).¹⁷ Hence, in ruling on a summary disposition motion, a licensing board's function is not to conduct a trial on the written record by weighing the evidence and endeavoring to determine the truth of the matter; rather, a board's role is to determine whether any genuine issues of material fact exists. See Anderson v. Liberty Lobby, 477 U.S. 242, 249 (1986); see also Spirit Airlines, Inc. v. Northwest Airlines, Inc., 431 F.3d 917, 930 (6th Cir. 2005) (“The moving party's burden is to show ‘clearly and convincingly’ the absence of any genuine issues of material fact.”).¹⁸

The movant's statement of undisputed material facts, if properly supported, is deemed to be admitted if it is not controverted by the non-movant. See 10 C.F.R. § 2.710(a), (b). Further,

¹⁶ See Transcript, [FPL] Turkey Point Units 6 and 7 at 414-93 (Apr. 5, 2016) [hereinafter Tr.]; see also Licensing Board Notice and Order (Scheduling and Providing Instructions for Oral Argument) (Mar. 1, 2016) (unpublished).

¹⁷ Rule 56 states that “[t]he court shall grant summary judgment if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law.” Fed. R. Civ. P. 56(a).

¹⁸ A material fact is one that “might affect the outcome of a [proceeding].” Anderson, 477 U.S. at 248. Thus, the “mere existence of *some* alleged factual dispute between the parties will not defeat an otherwise properly supported motion for summary judgment; the requirement is that there be no *genuine* issue of *material* fact.” Id. at 247-48.

a properly supported summary disposition motion may be granted if the non-movant's evidence "is merely colorable or is not significantly probative." Anderson, 477 U.S. at 249 (citation omitted). In essence, the inquiry is whether the evidence "is so one-sided that [the movant] must prevail as a matter of law." Id. at 252.

But summary disposition is not appropriate if it would require a licensing board to engage in the making of "[c]redibility determinations, the weighing of evidence, [or] the drawing of legitimate inferences from the facts," Anderson, 477 U.S. at 255, because the performance of such tasks signals the existence of a genuine issue of fact that must, in turn, be resolved at an evidentiary hearing. In determining whether a genuine issue of material fact exists, "[t]he evidence of the non-movant is to be believed, and all justifiable inferences are to be drawn in [the non-movant's] favor." Id. at 255. "If 'reasonable minds could differ as to the import of the evidence,' summary disposition is not appropriate." Pilgrim Nuclear Power Station, CLI-10-11, 71 NRC at 297-98 (quoting Anderson, 477 U.S. at 250-51).

Finally, case law counsels against granting summary disposition when the opposing party provides a viable expert opinion, because "competing expert opinions present the classic battle of the experts and it [is] up to a jury to evaluate what weight and credibility each expert opinion deserves." Phillips v. Cohen, 400 F.3d 388, 399 (6th Cir. 2005) (internal quotation marks omitted); accord Spirit Airlines, Inc., 431 F.3d at 931 ("Our precedents hold that if the opposing party's expert provides a reliable and reasonable opinion with factual support, summary judgment is inappropriate."); cf. Robinson v. Pezzat, No. 15-7040, slip op. at 14 (D.C. Cir. Apr. 1, 2016) ("[A non-movant] may defeat a summary judgment granted to a [movant] if the parties' sworn statements are materially different."). As the Commission has stated, in a case with "numerous factual issues and competing expert declarations, proceeding to an evidentiary hearing where factual claims appropriately can be weighed, clarified, and resolved with merits findings may be more efficient for all parties [than granting summary disposition]." Pilgrim Nuclear Power Station, CLI-10-11, 71 NRC at 307.

III. ANALYSIS

A. Summary Disposition is Granted for the First Component of Contention 2.1, Because No Genuine Issue of Material Fact Exists Regarding the Accuracy and Reliability of the Concentrations of the Four Challenged Chemicals in the Wastewater

1. FPL urges us to grant summary disposition of the first component of Contention 2.1, arguing that there is no genuine dispute that “the Constituent concentrations appearing in the ER and DEIS are conservative and reliable.” FPL’s Statement of Undisputed Material Facts ¶ 41. According to FPL, the concentrations used in the ER, which were later included in the DEIS, are based on “the highest concentration of each of the Constituents found in [South District Wastewater Treatment Plant] reports” from 2007 to 2011. Id. ¶¶ 12-13.¹⁹ Additional testing by FPL in 2013 and 2014 found none of the four chemicals at detectable levels, id. ¶¶ 15-25, and FPL thus concluded that the “concentrations derived from the [South District Wastewater Treatment Plant] reports . . . are extremely conservative.” Id. ¶ 26.²⁰ FPL therefore argues that summary disposition should be granted because it cannot reasonably be disputed “that the Constituent concentrations set forth in the DEIS are conservative and reliable.” FPL Motion at 12. Joint Intervenors do *not* dispute this fact. See Joint Intervenors’ Statement of Material Facts ¶ 9; Tr. at 473-76.²¹

¹⁹ As explained in the DEIS, and as relevant here, “[r]eclaimed water from the Miami-Dade Water and Sewer Department . . . would supply makeup water for the circulating water system of [Turkey Point] Units 6 & 7.” DEIS at 3-9. The reclaimed water would be piped from the “South District Wastewater Treatment Plant to the reclaimed water-treatment facility at the Turkey Point site.” Id.; see also id. at 3-30 to 3-31.

²⁰ The additional testing that FPL conducted in 2013 and 2014—which is discussed in detail in FPL’s pleadings and submissions, see, e.g., FPL Helton Declaration ¶¶ 7-40; FPL Powell Declaration ¶¶ 2-3; Powell Report at 1-4, 8—is not discussed in the DEIS. The NRC Staff acknowledges that it did “not perform[] a statistical analysis of the variation in these data,” Staff Answer at 3, but it agrees that this testing “provides additional insight into the concentrations of the chemicals identified in the contention that may be reasonable to expect in the wastewater used at Turkey Point Units 6 & 7.” Id.

²¹ Although Joint Intervenors do not dispute FPL’s 2013 and 2014 testing techniques and results, they state that “the wastewater exhibits variability, as evidenced by the previously reported detections of toluene, ethylbenzene, tetrachloroethylene, and heptachlor in previously collected samples.” Joint Intervenors’ Answer at 13. This statement is true, but it is also quite

Joint Intervenor's lack of dispute with FPL's assertion that "the Constituent concentrations appearing in the ER and DEIS are conservative and reliable," FPL's Statement of Undisputed Material Facts ¶ 41, is significant, because in the context of a summary disposition motion, a movant's properly supported statement of material facts is "considered to be admitted unless controverted . . . by the opposing party." 10 C.F.R. § 2.710(a); see also Advanced Med. Sys., Inc. (One Factory Row, Geneva, Ohio 44041), CLI-93-22, 38 NRC 98, 102-03 (1993) ("The opposing party must controvert any material fact properly set out in the statement of material facts that accompanies a summary disposition motion or that fact will be deemed admitted.").

Before granting summary disposition on this aspect of Contention 2.1, however, we pause to consider a factual discrepancy raised by the NRC Staff, who state that the concentration selected by FPL as the maximum detected value for tetrachloroethylene (i.e., 1.1 µg/L) was not, in fact, the maximum concentration detected by the South District Wastewater Treatment Plant. See NRC Barnhurst Aff. ¶ 23. Rather, "a tetrachloroethylene concentration of 2.0 µg/L was detected [in the 2007 annual report, which] . . . would represent a new maximum detected value for tetrachloroethylene." Id.²²

The NRC Staff avers, however, that this factual discrepancy is not material to FPL's Statement of Undisputed Material Facts ¶ 41, because "the maximum concentration value for tetrachloroethylene . . . remains very small in absolute terms . . . such that either value would be reasonable to use in evaluating the impacts of tetrachloroethylene in the injectate." NRC Barnhurst Aff. ¶ 25. Moreover, and importantly, FPL explained that it selected the 1.1 µg/L

beside the point in light of Joint Intervenor's concession that the Constituent concentrations in the ER and the DEIS are conservative and reliable. See Joint Intervenor's Statement of Material Facts ¶ 9; Tr. at 473-76.

²² The NRC Staff declares that it "verified that FPL did select the highest reported concentrations occurring between 2007 to 2011 as the maximum detected values . . . for [the other] three constituents: ethylbenzene, heptachlor, and toluene." NRC Barnhurst Aff. ¶ 22.

value because the wastewater for that data set had received tertiary level treatment and was therefore more representative of the wastewater that FPL expects to receive from the Miami-Dade Water and Sewage Department.²³ The NRC Staff accepted FPL's justification for using the lower level of tetrachloroethylene. See Supp. NRC Barnhurst Aff. ¶ 6. Consequently, the NRC Staff agrees with FPL that the Constituent concentrations "could be considered 'conservative' in the sense that the [DEIS analysis] used concentration data that bound the results obtained . . . and the use of those data in the DEIS is reasonable." NRC Barnhurst Aff. ¶ 12. Under these circumstances, we agree with the NRC Staff that the factual discrepancy it identified is not material.

In light of (1) FPL's properly supported motion for summary disposition of the first component of Contention 2.1; (2) Joint Intervenor's lack of dispute with FPL's Statement of Undisputed Material Facts ¶ 41, see Joint Intervenor's Statement of Material Facts ¶ 9; (3) the NRC Staff's lack of material disagreement with FPL's Statement of Undisputed Material Facts ¶ 41, see Staff Answer at 13-14; and (4) the absence of evidence negating a conclusion that the Constituent concentrations appearing in the ER and DEIS are conservative, reliable, and sufficiently accurate, we grant summary disposition to FPL as to the first component of Contention 2.1.

2. At oral argument, FPL and the NRC Staff argued for the first time that because there is no genuine dispute of fact that the Constituent concentrations in DEIS Table 3-5 are conservative and reliable, the Licensing Board should grant FPL's summary disposition motion

²³ See Letter from Robert M. Weisman, Counsel for NRC Staff, to Licensing Board at 2 (Apr. 4, 2016). On the evening before oral argument on this summary disposition motion, the NRC Staff notified this Board of an error in its original filings. See id. at 1. Specifically, the NRC Staff advised that the Barnhurst Affidavit incorrectly stated that the Staff had "used the higher value [of tetrachloroethylene] in its analysis in the DEIS." Id.; see also NRC Barnhurst Aff. ¶ 25. In its April 4 letter, the NRC Staff enclosed a supplemental affidavit from Mr. Barnhurst that corrected his mistake. See Supplemental Affidavit of Daniel O. Barnhurst (Apr. 4, 2016) [hereinafter Supp. NRC Barnhurst Aff.]. Neither Joint Intervenor nor FPL took issue with this eleventh hour correction by the NRC Staff. See Tr. at 425-27, 476-77.

in its entirety, without performing a summary disposition analysis on the second component of Contention 2.1. Counsel for FPL framed this new argument as follows: “[O]ur position is if those values are reasonably reliable and as low as they are, the second component is not material.” Tr. at 435; see also Tr. at 448 (Counsel for the NRC Staff argues that “[i]f the concentrations are low enough, if the concentrations are reliable and accurate, it doesn’t matter whether there’s migration, right. The effect, the environmental effect of the injection would be small in any case.”).

We reject this argument on the alternative grounds that (1) it is not timely; and (2) it is not adequately supported. First, this argument is not timely because FPL and the NRC Staff raised it for the first time at oral argument. To permit FPL and the NRC Staff to blindsides Joint Intervenor with this new argument would violate case law and implicate due process concerns. See, e.g., United States v. Almaraz, 306 F.3d 1031, 1041 (10th Cir. 2002) (“Raising the issue for the first time at oral argument affords the [opposing party] an inadequate opportunity to address it. It is unfair to lie in wait until oral argument to present issues material to the [case].”).²⁴

Second, this argument is not adequately supported. A movant seeking summary disposition has the burden to show “clearly and convincingly” the absence of any genuine issue of material fact. Spirit Airlines, 431 F.3d at 930. FPL and the NRC Staff seek to rely on unsupported representations of counsel to satisfy that burden; this they may not do. Questions of fact are “not susceptible of resolution . . . on the basis of nothing more than the generalized representations of counsel who are unequipped to attest on the basis of their own personal

²⁴ This new argument is not reasonably discernible from any of the pleadings filed by FPL or the NRC Staff. See supra Part I.2. Moreover, FPL’s motion can fairly be read to *exclude* this newly proffered argument, because FPL asserted that “the concentration of the Constituents are irrelevant to the potential impacts on drinking water” due to the hydrogeological confinement, the design of the injection wells, and the monitoring and mitigation programs. FPL Motion at 4; see also FPL McNabb Declaration ¶¶ 10, 51.

knowledge to the accuracy of the representations.” Commonwealth Edison Co. (Byron Nuclear Power Station, Units 1 & 2), ALAB-735, 18 NRC 19, 23-24 (1983). The material issues of fact embedded in the new argument involve complex, technical questions relating to the impact of introducing chemicals—some of which are known carcinogens, see Joint Intervenor’s Answer at 13—into Underground Sources of Drinking Water. Absent a supporting expert opinion from FPL or the NRC Staff, we are not prepared to conclude that FPL has shown clearly and convincingly that there is no genuine issue of fact that, simply by virtue of the low numerical values of the Constituent concentrations, the environmental impacts would be small if the Constituent concentrations listed in DEIS Table 3-5 were released into the Upper Floridan Aquifer.²⁵

We therefore proceed to consider whether summary disposition is warranted for the second component of Contention 2.1.

B. Summary Disposition is Denied for the Second Component of Contention 2.1, Because A Genuine Issue of Material Fact Exists Regarding the Possible Migration of Wastewater to the Upper Floridan Aquifer

FPL also seeks summary disposition of the second component of Contention 2.1, arguing that the DEIS reasonably concluded that “the environmental impacts of injecting wastewater into the Boulder Zone using deep well injection . . . would be SMALL.” FPL Motion at 2. Specifically, FPL argues that it is highly unlikely that wastewater will migrate to the Underground Source of Drinking Water in the Upper Floridan Aquifer because there can be no reasonable dispute that “(1) the injectate will be confined within the Boulder Zone; (2) the

²⁵ That the Constituent concentrations listed in DEIS Table 3-5 are less than EPA standards for drinking water, see Tr. at 489, does not alter our conclusion. Because FPL and the NRC Staff failed to file expert opinions or documentation in support of their new argument, the record does not clearly and convincingly show the absence of a genuine factual issue as to whether the introduction of these Constituents into the Upper Floridan Aquifer—via migration or well malfunction—would have a small environmental impact. Moreover, the DEIS fails to discuss, much less support, the proposition underlying this new argument. See Tr. at 488 (counsel for the NRC Staff concedes that, to his knowledge, the DEIS nowhere provides that the environmental impacts would be small if the Constituent concentrations in Table 3-5 were released directly into the Upper Floridan Aquifer).

injection wells' design and testing are highly regulated to prevent leaks; and (3) the state of Florida requires that the injection wells be monitored to ensure they are functioning properly during operation." FPL's Statement of Undisputed Material Facts ¶ 42; see also FPL Motion at 2, 13-25.

The Board denies FPL's motion for summary disposition on the second component of Contention 2.1. As discussed below, relying principally on the affidavit of Joint Intervenor's environmental expert, Mark Quarles, we conclude that genuine disputes of material fact exist as to FPL's assertion that it is highly unlikely that wastewater will migrate to and adversely impact the Underground Source of Drinking Water in the Upper Floridan Aquifer.²⁶

1. Joint Intervenor's expert, Mr. Quarles, explains why, in his opinion, the results from FPL's EW-1 well test do not support a conclusion that the Middle Confining Unit will prevent upward migration of wastewater out of the Boulder Zone. According to Mr. Quarles, FPL's conclusion that these tests showed no indication of enhanced vertical flow paths "is not

²⁶ By way of background, data collected by FPL at the Turkey Point site during construction of its Exploratory Well-1 (EW-1) indicated that—consistent with subsurface hydrogeology in the region as determined by other studies, see DEIS at 2-47 to 2-49, 2-53 to 2-54, 2-57—the subsurface hydrogeology at EW-1 consists of the following three intervals: (1) the Biscayne Aquifer, which descends from the surface to about 140 feet; (2) the Intermediate Confining Unit, which has an upper boundary of about 140 feet and a lower boundary of about 1,010 feet; and (3) the Floridan Aquifer System, which is the lowest interval. See FPL McNabb Declaration ¶¶ 20, 26, 27; DEIS fig. 2-17, at 2-48. The Floridan Aquifer System, in turn, also is divided into three intervals, see DEIS at 2-53, which from shallowest to deepest are (1) the Upper Floridan Aquifer, which has an upper boundary of about 1,010 feet and a lower boundary of about 1,450 feet, see id. at 2-48; (2) the Middle Confining Unit, which has an upper boundary of about 1,450 feet and a lower boundary of about 2,915 feet, see id.; and (3) the Lower Floridan Aquifer, which has an upper boundary of about 2,915 feet and extends below 3,232 feet, see id. at 2-48, 2-57. Within the Lower Floridan Aquifer is the Boulder Zone, which is "a cavernous, high-permeability geologic horizon" beginning at a depth of about 3,030 feet and extending below 3,232 feet. Id. at 2-53. "Because of its isolation and high permeability, the Boulder Zone has been used for injection of municipal and industrial wastewater in Florida." Id. at 2-53 to 2-54 (citation omitted). The DEIS further states that "FPL identified the interval [in the Middle Confining Unit] from 1,930 feet to 2,915 feet as the primary confinement for injectate at the [Turkey Point] site" that will be pumped into the Boulder Zone. Id. at 2-54. The deepest Underground Source of Drinking Water is located in the Upper Floridan Aquifer at a depth of about 1,505 feet. See id.; FPL McNabb Declaration ¶ 10.

supported by well-specific data—as indicated by the presence of voids in the bedrock that resulted in relatively high porosities, low bedrock core recoveries, and failed bedrock straddle packer test.” Third Quarles Aff. ¶ 22. “The results of all three of those tests,” states Mr. Quarles, “suggest significant fractures and substantial weathering that may not be capable of preventing substantial vertical and horizontal migration of injected wastewater.” Id. Mr. Quarles’ statements about the alleged flaws in the well test analyses are specific and thorough, see id. ¶¶ 13-24, and at this point in the proceeding, they must be accepted as true. See Anderson, 477 U.S. at 255; Pilgrim Nuclear Power Station, CLI-10-11, 71 NRC at 303.

Mr. Quarles provides further support for his position by pointing to a United States Geological Survey (USGS) regional study that concluded the degree of confinement provided by the Middle Confining Unit is “‘uncertain’—thereby contradicting the degree of confidence shared by [FPL and the NRC Staff] that an adequate confining layer exists.” Third Quarles Aff. ¶ 29.²⁷ Additionally, he maintains that the NRC Staff failed to consider a 2012 USGS study that “collected data very near the Turkey Point site” and concluded that “tectonic faults and karst collapse structures” provide structural pathways for the possible vertical flow of water through the Middle Confining Unit. Id. ¶¶ 30, 31.²⁸ The illustrations in the 2012 study, states Mr. Quarles, show the “location of these faults; how they breach previously assumed bedrock

²⁷ See Ronald Reese and Emily Richardson, Synthesis of the Hydrogeologic Framework of the Floridan Aquifer System and Delineation of the Major Avon Park Permeable Zone in Central and Southern Florida, [USGS] Scientific Investigations Report 2007-5207 (2008) (ADAMS Accession No. ML16034A497).

²⁸ See Kevin Cunningham, et al., Near-Surface, Marine Seismic-Reflection Data Define Potential Hydrogeologic Confinement Bypass in the Carbonate Floridan Aquifer System, Southeastern Florida, Society of Exploration Geophysics Annual Meeting (2012) (ADAMS Accession No. ML16034A495). At oral argument, counsel for FPL stated that FPL’s Final Safety Analysis Report (FSAR) discusses the 2012 USGS study. See Tr. at 439-40. The discussion in the FSAR, however, was limited to the 2012 study’s seismic information and did not address the hydrogeological aspects of the study. See FPL Turkey Point Plant, Units 6 & 7 COL Application, [FSAR], pt. 2, at 2.5.1-32, 2.5.1-33, 2.5.1-131 to 2.5.1-132 (rev. 7 Dec. 28, 2015) (ADAMS Accession No. ML15301A304).

confining layers; and how wastewater that is injected deep into the bedrock can migrate upward to [Underground Sources of Drinking Water].” Id. ¶ 32; see also id. ¶ 33. Mr. Quarles declares that the 2012 study controverts the conclusion shared by FPL and the NRC Staff and embodied in the DEIS, see DEIS at 2-54 to 2-56, that “‘enhanced vertical flow’ of wastewater through confining units is ‘unlikely.’” Third Quarles Aff. ¶ 35.

Because Joint Intervenors provide a reliable and reasonable expert opinion with factual support as to the question of the likelihood of the upward migration of wastewater from the Boulder Zone to the Underground Source of Drinking Water in the Upper Floridan Aquifer, summary disposition is inappropriate. See Spirit Airlines, Inc., 431 F.3d at 931.

Notably, Joint Intervenors are not alone in disputing FPL’s statement that the injected wastewater will be confined within the Boulder Zone. See FPL Statement of Undisputed Material Facts ¶ 42. The NRC Staff’s expert, Mr. Barnhurst, declares that wastewater could migrate upward out of the Boulder Zone, penetrating into the Middle Confining Unit by as much as 300 feet. See NRC Barnhurst Aff. ¶¶ 26-27; DEIS at 5-17. The NRC Staff argues, however, that the potential upwelling of wastewater out of the Boulder Zone “would not be expected to reach or adversely impact the Upper Floridan Aquifer” and, accordingly, this dispute is not material. NRC Staff Answer at 12. This argument ignores that a sharp conflict of expert opinion exists between FPL and Joint Intervenors as to the confining capacity of the Middle Confining Unit, and this critical issue is further muddled by the differing expert opinion provided by the NRC Staff. These “competing expert opinions present the classic battle of the experts” that requires an evidentiary hearing to “evaluate what weight and credibility each expert opinion deserves.” Phillips, 400 F.3d at 399.

2. In addition to the factual dispute over the confining capacity of the Middle Confining Unit, Mr. Quarles challenges FPL’s claim, see FPL McNabb Declaration ¶¶ 12, 46-50, that the highly regulated design and testing of the injection wells will prevent leakage of wastewater that could migrate to the Underground Source of Drinking Water. With regard to

well design and construction, Mr. Quarles states that (1) a “formation pressure test [should have been] conducted to monitor for leakage between the concrete that is in contact with the bedrock formations and all outer steel casings,” Third Quarles Aff. ¶ 43; and (2) “[f]ormation pressure tests and cement bond logs of each well casing string . . . should have been completed to document cement coverage and seal.” Id. Declaring that the USGS “has concluded that wastewater injection wells can fail and result in vertical migration of wastewater,” id. ¶ 39, Mr. Quarles states that the Florida Department of Environmental Protection’s requirement to perform mechanical integrity tests on injection wells “a minimum every five (5) years fails to recognize that a well can fail at any time during that 5-year period. . . . due to the repeated stresses and strains from the high-pressure injections.” Id. ¶ 44. We conclude that Mr. Quarles’ expert opinion is sufficient to raise a genuine issue of fact regarding whether the design and testing of the injection wells will prevent leakage of wastewater that could contaminate the groundwater. See Spirit Airlines, Inc., 431 F.3d at 931.

3. Finally, Mr. Quarles challenges the adequacy of FPL’s groundwater monitoring program to prevent wastewater from contaminating the Underground Source of Drinking Water.²⁹ Pointing to “18 documented instances” of deep-well injected wastewater contaminating an Underground Source of Drinking Water, Third Quarles Aff. ¶ 40, Mr. Quarles intimates that FPL’s tests would occur too infrequently to provide an “‘early warning’ for vertical migration of

²⁹ FPL will construct six dual-zone monitoring wells, installing one between each pair of its twelve deep-injection wells. Each monitoring well will be positioned about 75 feet from the injection wells, see DEIS at 3-10, fig. 3-7 at 3-12, 5-28; Tr. at 492, and will monitor groundwater at two depths. The upper zone monitor will be near the base of the Underground Source of Drinking Water in the Upper Floridan Aquifer at a depth of about 1,400 to 1,420 feet. DEIS at 5-28. The lower zone monitor will be in the Middle Confining Unit at a depth of about 1,850 to 1,870 feet, id., and it will “serve[] to act as an early warning system if fluid migration were to occur.” FPL McNabb Declaration ¶ 38. Groundwater samples will be collected and analyzed on a weekly basis during the first six months to two years of operation and monthly thereafter. Id. ¶ 39; see Fla. Admin. Code 62-528.450(3)(b)(5) (requiring written authorization for operational testing to include “[w]eekly ground water sampling of monitor wells”); id. 62-528.450(3)(d) (allowing reduction in sampling frequency “after a minimum of six months of operational testing if the data indicate that the parameter values have stabilized”).

wastewater along vertical pathways such as faults, fractures, and well failures,” which, he states, “can occur in a matter of days.” Id. ¶ 42; see also id. ¶ 45 (specifying instances where monitoring failed to detect upward migration of wastewater that caused “widespread contamination”). He also notes that, “given [the] very close proximity [of the monitoring wells] to the injection well[s],” they would not detect groundwater contamination if the wastewater “first migrates horizontally within the Boulder Zone and then migrates vertically.” Id. ¶ 47.³⁰ In our judgment, this information is sufficiently probative to demonstrate that there remains a genuine dispute of material fact concerning the ability of FPL’s monitoring program to detect upward migrations of wastewater and to ensure any environmental impact would be minor. See Anderson, 477 U.S. at 249.³¹

4. In sum, Joint Intervenors have proffered an expert opinion that raises credible disagreements with the following factual assertions advanced by FPL’s and the NRC Staff’s experts: (1) the wastewater will be confined in, or near, the Boulder Zone; (2) the injection wells’ design and testing will prevent leaks; and (3) if wastewater were to migrate from the Boulder Zone or leak from an injection well, it would be detected and its effects would be mitigated before reaching the Upper Floridan Aquifer and adversely impacting an Underground Source of Drinking Water. We cannot, at the summary disposition stage, choose a winner in this battle of experts. See Pilgrim Nuclear Power Station, CLI-10-11, 71 NRC at 297 (“At [the summary

³⁰ The NRC Staff agrees with Joint Intervenors on this point, acknowledging that the monitoring wells would only detect migration of wastewater “that occurred in their vicinity,” or “within the range in which they are capable of detecting upward fluid movement.” NRC Barnhurst Aff. ¶¶ 29, 30.

³¹ Relatedly, Mr. Quarles also challenges the efficacy of FPL’s mitigation program in the event that wastewater contaminates an Underground Source of Drinking Water. In his view, before the DEIS can legitimately conclude that “the impacts of upward migration that could occur before detection would be minor,” DEIS at 5-29, it must discuss “sites [where wastewater has contaminated Underground Sources of Drinking Water], investigative responses, corrective measures, and all associated costs . . . to support their conclusions of minimal impact.” Third Quarles Aff. ¶ 46; see also id. ¶ 41 (“remedial strategies . . . should have been prominently evaluated in the . . . DEIS”).

disposition] stage, ‘the judge’s function is not himself to weigh the evidence and determine the truth of the matter but to determine whether there is a genuine issue for [hearing].’”) (quoting Anderson, 477 U.S. at 249). Rather, our resolution of the second component of Contention 2.1 must await an evidentiary hearing, where we will have the first-hand opportunity to question the experts, assess their credibility, and weigh their testimony and the evidence.³²

³² At an evidentiary hearing, FPL and the NRC Staff may also endeavor to show that the environmental impacts would be small if the Constituents, at concentrations listed in DEIS Table 3-5, were released into the Upper Floridan Aquifer. See supra Part III.A.2.

IV. ORDER

For the foregoing reasons, we grant FPL's motion for summary disposition as to the first component of Contention 2.1, and we deny summary disposition as to the second component.

We thus reformulate Contention 2.1 to eliminate the issue of chemical concentrations,³³ so it now reads as follows:³⁴

The DEIS is deficient in concluding that the environmental impacts from FPL's proposed deep injection wells will be "small." The chemicals ethylbenzene, heptachlor, tetrachloroethylene, and toluene in the wastewater injections at concentrations listed in DEIS Table 3-5 may adversely impact the groundwater should they migrate from the Boulder Zone to the Upper Floridan Aquifer.

It is so ORDERED.

THE ATOMIC SAFETY
AND LICENSING BOARD

/RA/

E. Roy Hawkens, Chairman
ADMINISTRATIVE JUDGE

/RA/

Dr. Michael F. Kennedy
ADMINISTRATIVE JUDGE

/RA/

Dr. William C. Burnett
ADMINISTRATIVE JUDGE

Rockville, Maryland
April 21, 2016

³³ See Crow Butte Res., Inc. (North Trend Expansion Project), CLI-09-12, 69 NRC 535, 552 (2009) ("Our boards may reformulate contentions to 'eliminate extraneous issues or to consolidate issues for a more efficient proceeding.'").

³⁴ Although Contention 2.1 originally was filed based on the ER, the information in the DEIS is sufficiently similar to the information in the ER that the remaining aspect of Contention 2.1 constitutes a viable challenge to the adequacy of the DEIS. Our reformulation of the contention reflects that fact. See, e.g., La. Energy Servs., L.P. (Claiborne Enrichment Center), CLI-98-03, 47 NRC 77, 84 (1998).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)	
)	
FLORIDA POWER & LIGHT COMPANY)	Docket Nos. 52-040 and 52-041-COL
(Juno Beach, Florida))	
)	
(Turkey Point, Units 6 & 7))	

CERTIFICATE OF SERVICE

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Turkey Point, Units 6 and 7, Docket Nos. 52-040 and 52-041-COL

MEMORANDUM AND ORDER (Granting in Part and Denying in Part FPL's Motion for Summary Disposition) (LBP-16-03)

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[Original signed by Clara Sola _____]
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