

August 8, 2012

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

NRC STAFF'S ANSWER TO APPLICANT'S
MOTION FOR SUMMARY DISPOSITION OF AMENDED CONTENTION 2.1

INTRODUCTION

Pursuant to 10 C.F.R. § 2.1205, the U.S. Nuclear Regulatory Commission staff (Staff) hereby answers "Florida Power & Light Company's [(FPL or Applicant)] Motion for Summary Disposition of Joint Intervenor's Amended Contention 2.1" (Jul. 19, 2012) (Motion). As explained below, the Staff agrees that the Applicant is entitled to summary disposition of Amended Contention 2.1 because the Applicant has cured the omission cited in the contention by identifying the source of the data for the chemical concentrations in the Applicant's Environmental Report (ER), Revision 3, Table 3.6-2, for ethylbenzene, heptachlor, tetrachloroethylene, and toluene. The Staff, however, does not take a position with respect to the other points raised by the Applicant in its motion.

BACKGROUND

On June 30, 2009, FPL, pursuant to the Atomic Energy Act of 1954, as amended, and the Commission's regulations, submitted an application for combined licenses (COL) for two AP1000 Pressurized Water Reactors (PWRs) to be located adjacent to the existing Turkey Point Units 1 through 5, at the Turkey Point site near Homestead, Florida (Application). See Letter from M.K. Nazar, FPL, to M. Johnson, NRC, dated June 30, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML091830589). The proposed units

would be known as Turkey Point, Units 6 & 7. On June 18, 2010, the NRC published a Notice of Hearing and Opportunity to Petition for Leave to Intervene. See “Florida Power & Light Company, Combined License Application for the Turkey Point Units 6 & 7, Notice of Hearing, Opportunity for Leave to Petition 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).

In response to the Notice of Hearing, Mark Oncavage, Dan Kipnis, Southern Alliance for Clean Energy, and the National Parks Conservation Association (collectively, Joint Intervenors) submitted their Petition, through which they sought to intervene in this proceeding. See Petition for Intervention (Aug. 17, 2010) (Petition). In a decision dated February 28, 2011, the Atomic Safety and Licensing Board (Board) presiding over this proceeding admitted Joint Intervenors’ Contention NEPA 2.1, which asserted an omission from FPL’s ER, and granted the Petition. See *Florida Power & Light Co. (Turkey Point Units 6 and 7)*, LBP-11-06, 73 NRC 149, 171, 188-94 (2011).

On December 16, 2011, the Applicant submitted a revision to the Application. See Letter to NRC from M.K. Nazar, FPL, dated December 16, 2011 (ML11361A102). The revised ER submitted as part of the Application listed the wastewater constituent chemicals identified in Contention NEPA 2.1 as missing from the original ER and included analysis of the potential impacts on groundwater quality of, among other things, injecting the reclaimed cooling water containing these chemicals into the lower Floridan Aquifer via underground injection wells. See Application, Rev. 3, Part 3 (ER), Table 3.6.2 at 3.6-7, § 5.2.3.2.4 at 5.2-25, and § 5.2.1.1.9 at 5.2-10 to 5.2-13 (ADAMS Accession Nos. ML11362A163 and ML11362A165, respectively). Subsequently, the Applicant filed a motion to dismiss Contention NEPA 2.1 as Moot. “Florida Power & Light Company’s Motion to Dismiss Joint Intervenors’ Contention 2.1 As Moot” (Jan. 3, 2012) (ADAMS Accession No. ML 12003A111).

On January 23, 2012, the Joint Intervenors filed a response to FPL's January 3 motion as well as a motion to amend Contention NEPA 2.1. "Joint Intervenors' Answer to FPL's Motion to Dismiss Joint Intervenors' Contention 2.1 as Moot, and Alternatively, Joint Intervenors' Motion to Amend Contention NEPA 2.1" (Jan. 23, 2012) (ADAMS Accession No. ML12023A270). On January 26, 2012, the Board dismissed Contention NEPA 2.1 as moot. *Florida Power and Light Co. (Turkey Point Units 6 and 7), Memorandum and Order (Granting FPL's Motions to Dismiss Joint Intervenors' Contention 2.1 and CASE's Contention 6 as Moot)* (Jan. 26, 2012) (unpublished) (ADAMS Accession No. ML12026A438) at 3.

On May 2, 2012, the Board granted, in part, Joint Intervenors' motion to admit Amended Contention 2.1. Specifically, the Board found that Joint Intervenors' assertion that the ER improperly failed to identify the source of the data for the chemical concentrations of ethylbenzene, heptachlor, toluene, and tetrachloroethylene identified in Table 3.6-2 satisfied the requirements for contention admissibility. See *Florida Power and Light Co. (Turkey Point Units 6 and 7), LBP-12-09, 75 NRC ___* (May 2, 2012) (slip op. at 15-16). The Board so ruled since Contention 2.1, as amended, was supported by the Joint Intervenors' argument that such an omission "might affect the accuracy and reliability of the chemical concentrations listed in ER Table 3.6-2, which, in turn, can affect the determination of the environmental impacts associated with these chemicals." *Id.* at 15. FPL then filed its Motion on July 19, 2012.

DISCUSSION

I. Legal Standards

The standards for summary disposition under 10 C.F.R. § 2.1205 are the same as those under 10 C.F.R. § 2.710(d)(2). 10 C.F.R. § 2.1205(c) ("In ruling on motions for summary disposition, the presiding officer shall apply the standards for summary disposition set forth in subpart G of this part"). A party is entitled to summary disposition as to all or any part of the matters involved in the proceeding if the record shows that "there is no genuine issue as to any

material fact and that the moving party is entitled to a decision as a matter of law.”

10 C.F.R. § 2.710(d)(2). “The standards 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.* (Pilgrim Nuclear Power Station), CLI-10-11, 71 NRC 287, 297 (2010) (citing *Advanced Medical Systems, Inc.* (One Factory Row, Geneva, Ohio 44041), CLI-93-22, 38 NRC 98, 102 (1993) (*AMS*)).

The movant bears the initial burden of showing that there is no genuine issue as to any material fact, which it attempts to do by means of a required statement of material facts not at issue and any supporting materials that accompany its dispositive motion. *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), LBP-99-23, 49 NRC 485, 491 (1999). If the opposing party fails to counter each adequately supported material fact with its own statement of material facts in dispute and supporting materials, the movant’s facts will be deemed admitted. *AMS*, CLI-93-22, 38 NRC at 102-03. See also 10 C.F.R. § 2.710(b) (“[A] party opposing the motion may not rest upon the mere allegations or denials of his answer,” but rather, “must set forth specific facts showing that there is a genuine issue of fact”). In ruling on summary disposition motions, licensing boards are to consider “the filings in the proceeding, depositions, answers to interrogatories, and admissions on file, together with the statements of the parties and the affidavits.” 10 C.F.R. § 2.710(d)(2). “[T]he 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.” *Anderson v. Liberty Lobby*, 477 U.S. 242, 247-48 (1986) (emphasis in original). Also, “[o]nly disputes over facts that might affect the outcome’ of a proceeding would preclude summary disposition.” *Pilgrim*, CLI-10-11, 71 NRC at 297 (quoting *Liberty Lobby*, 477 U.S. at 248).

II. FPL's Motion Should Be Granted

As reformulated by the Board, Amended Contention 2.1 states:

The ER is deficient in concluding that the environmental impacts from FPL's proposed deep injection wells will be "small" because the ER fails to identify the source data of the chemical concentrations in ER Rev. 3 Table 3.6-2 for ethylbenzene, heptachlor, tetrachloroethylene, and toluene. Such information is necessary to ensure the accuracy and reliability of those concentrations, so it might reasonably be concluded that those chemicals will not adversely impact the groundwater by migrating from the Boulder Zone to the Upper Floridan Aquifer.

Turkey Point, LBP-12-09, 75 NRC __ (slip op. at 16).

In addition, in admitting Amended Contention 2.1, the Board noted as follows:

Amended Contention NEPA 2.1, as we have framed it above, is a contention of omission which, like the original Contention NEPA 2.1 admitted in LBP-11-06, is *supported by the migration argument*. We express no view on whether the migration component of this amended contention would continue to support a litigable issue if FPL cured the omission and, as a result, was able reasonably to demonstrate that the disputed chemical concentrations listed in ER Table 3.6-2 (1) were accurate and reliable, and (2) resulted in "small" environmental impacts when discharged through the injection wells.

Id. at 16 n.23 (emphasis in original).

In its motion, the Applicant argues that it is entitled to summary disposition of Amended Contention 2.1 on the grounds that no genuine issue as to any material fact exists, and that thus it is entitled to a decision as a matter of law. Applicant's Motion at 1. As explained below, the Staff agrees that summary disposition of Amended Contention 2.1 is warranted. The attached affidavit of Daniel O. Barnhurst supports the Staff position. See Affidavit of Daniel O. Barnhurst Concerning Amended Contention 2.1 (Barnhurst Aff.) (Staff Attachment 1).

The essence of Amended Contention 2.1, as stated above, is that the ER "fails to identify the source data of the chemical concentrations" for ethylbenzene, heptachlor, tetrachloroethylene, and toluene. *Turkey Point*, LBP-12-09, 75 NRC __ (slip op. at 16). The Board characterized Amended Contention 2.1 as "a contention of omission." *Id.* at 16 n.23. The Applicant has cured the omission cited in the contention by identifying the source of the data for the chemical concentrations in the Applicant's ER Rev. 3 Table 3.6-2, for ethylbenzene,

heptachlor, tetrachloroethylene, and toluene. Barnhurst Aff. ¶¶ 4–6, 8. Since this is the only fact material to Amended Contention 2.1 other than the background to that contention (*see id.* ¶ 6), the Applicant is entitled to judgment as a matter of law.¹ See AMS, CLI-93-22, 38 NRC at 102. The Staff notes that the Joint Intervenors submitted their answer to the Motion on August 6, 2012. See “Joint Intervenors’ Answer to FPL’s Motion for Summary Disposition of Joint Intervenors’ Amended Contention 2.1” (Aug. 6, 2012) (Joint Intervenors’ Answer). The Joint Intervenors do not dispute FPL Statement of Material Fact No. 16. See Joint Intervenors’ Answer at 7; “Joint Intervenors’ Statement of Material Facts as to which a Genuine Issue Exists, in Support of [Joint Intervenors’ Answer],” ¶ 5 (Attachment 1 to Joint Intervenors’ Answer). As described above, this is dispositive of Amended Contention 2.1.

The Staff notes that while it has verified the Applicant’s representations regarding the concentrations of ethylbenzene, heptachlor, and toluene, it disagrees with the Applicant’s assertion regarding the concentration of tetrachloroethylene in the wastewater used in the facility. Barnhurst Aff. ¶¶ 7-12. However, Amended Contention 2.1, as admitted, solely concerns the omission of the source of the concentration data in ER Rev. 3 Table 3.6-2, as described above. Accordingly, this disagreement regarding the concentration of tetrachloroethylene does not alter the Staff’s conclusion that the Applicant has demonstrated

¹ Where a contention asserts the omission of information from an application, and the applicant subsequently supplies the information to the Staff or the Staff considers the information in a draft Environmental Impact Statement (EIS), the contention is moot. *Duke Energy Corp.* (McGuire Nuclear Station Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-28, 56 NRC 373, 383 (2002) (*McGuire/Catawba*). In regard to the instant Motion, FPL did not previously submit its analysis of migration of the four chemical species identified in Amended Contention 2.1 to the Staff, nor has the Staff issued a draft EIS in connection with the Application. The Applicant did, however, identify the source of the data for the concentrations given in ER Rev. 3 Table 3.6-2, which is the omission asserted by Contention 2.1, in the response to NRC Request for Additional Information (RAI) H4.2-4 (5765) (ADAMS Accession No. ML12074A041), and in the Motion, as explained above. See Barnhurst Aff. ¶¶ 5–6, 8. Accordingly, the Board could dismiss the contention as moot. See *McGuire/Catawba*, CLI-02-28, 56 NRC at 383. In any event, because the other assertions the Applicant makes in its Motion are not material to the contention as admitted, the Board need not consider them in ruling on the Motion.

that the omission on which Amended Contention 2.1 is based has been cured and that summary disposition is therefore appropriate.²

The Staff also notes that it will consider impacts from proposed deep injection wells in the EIS, but that in doing so the Staff does not now plan to rely on the Applicant's method of evaluation set forth in the Motion. *Id.*, ¶ 13. However, the Staff reserves the right to consider in the EIS both that method of evaluation and the FPL results stated in the Motion. *Id.* Consistent with the discussion above, the Staff's intended use of a different methodology does not alter its conclusion that no dispute of material fact remains with respect to the present contention of omission and that the Applicant is thus entitled to summary disposition of Contention 2.1.

CONCLUSION

For the reasons set forth above, the Board should grant the Applicant's Motion.

Respectfully submitted,

/Signed (electronically) by/

Robert M. Weisman
Counsel for the NRC Staff
U.S. Nuclear Regulatory Commission
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Washington, DC 20555-0001
(301) 415-1696
Robert.Weisman@nrc.gov

Dated at Rockville, Maryland
this 8th day of August, 2012.

² The Staff acknowledges that the Board might determine that Amended Contention 2.1 is not a pure contention of omission, but already encompasses a genuine dispute regarding the "accuracy and reliability" of the concentration data in ER Rev. 3 Table 3.6-2. Should the Board do so, then the Staff disagreement with the Applicant in regard to the concentration of tetrachloroethylene might be a basis for the Board to deny the Motion with respect to that chemical. Under that interpretation of the contention, however, the Staff submits that the better approach would be to assess whether any apparent substantive dispute in regard to the concentration data in ER Rev. 3 Table 3.6-2 constitutes a dispute with the Application, since such a dispute would appear to be based on new information relating to the source of these data. See *generally McGuire/Catawba*, CLI-02-28, 56 NRC at 383 (an intervenor "must timely file a new or amended contention that addresses the factors in [section 2.309] in order to raise specific challenges regarding the new information" provided to moot a contention of omission).

STAFF ATTACHMENT 1

August 8, 2012

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

AFFIDAVIT OF DANIEL O. BARNHURST CONCERNING AMENDED CONTENTION 2.1

I, Daniel O. Barnhurst, do state as follows:

1. I am employed by the United States Nuclear Regulatory Commission (NRC) as a Hydrologist in the Division of Site Safety and Environmental Analysis, Office of New Reactors. I have been employed by the NRC since May 2008. I am a Professional Geologist with more than 12 years of experience in hydrogeological applications including hydrogeochemistry; aquifer characterization; groundwater flow and contaminant fate and transport modeling; and design of monitoring well networks. Before coming to the NRC I worked at the Savannah River Site as part of a team that characterized the long term impact of the operation of multiple reactors on groundwater quality through installation and sampling of monitoring wells and development of predictive numerical models. Since coming to the NRC in 2008 I have provided technical oversight to impact analyses in EISs evaluating reactor construction and operation on both ground and surface water quality at sites in the southeast United States including Florida. A statement of my professional qualifications is attached hereto as Staff Attachment 2.

2. The purpose of this affidavit is to present the NRC Staff's analysis of the information provided by Florida Power & Light (FPL or Applicant) in its Motion for Summary Disposition of

Joint Intervenors' Amended Contention 2.1 (Motion) concerning the source data for the concentrations shown in Table 3.6-2 of the Applicant's Environmental Report (ER), Revision 3, for ethylbenzene, heptachlor, tetrachloroethylene, and toluene, which the Applicant expects to be part of the reclaimed wastewater supplied as cooling water by the Miami-Dade Water and Sewer Department (MDWASD) South District Wastewater Treatment Plant (SDWWTP) and discharged via deep injection wells into the Boulder Zone of the Floridan Aquifer during operation of Turkey Point Units 6 and 7.

3. FPL has applied, pursuant to 10 C.F.R. Part 52, Subpart C, for combined licenses (COLs) to construct and operate two AP1000 pressurized water reactor units to be designated Turkey Point Units 6 and 7. 74 Fed. Reg. 38,477 (Aug. 3, 2009) (Agencywide Documents Access and Management System (ADAMS) Accession No. ML091830589).

4. The NRC Staff agrees that there is no genuine issue of material fact as to the Applicant's Statement of Material Facts Nos. 1–15.¹ The NRC Staff's view of the Applicant's Statement of Material Facts No. 16 is set forth in ¶¶ 5 and 6 below.

5. The NRC Staff agrees that FPL has specifically referenced the source of the data used to determine the estimated concentrations of ethylbenzene, heptachlor, tetrachloroethylene, and toluene reported in ER Rev. 3 Table 3.6-2. In the Declaration of David M. Wagner (Wagner Declaration), this source is described as “the South District Wastewater Treatment Plant (“SDWWTP”) annual reports for the years 2007 through 2011 prepared by the Miami-Dade Water and Sewer Department (“MDWASD”) and filed with the Underground Injection Control Program of the Florida Department of Environmental Protection.” See Motion, Attachment 2, at 3 ¶ 6.

6. Because the Staff concludes that the Applicant has provided the source data for its calculations of the chemical concentrations in the ER Rev. 3 Table 3.6-2, the Applicant's

¹ The Staff does note, however, that Statement of Material Facts No. 15 omits the final sentence of Amended Contention 2.1, as admitted by the Board.

Statement of Material Facts Nos. 17–31 are not material to the resolution of Amended Contention 2.1. While the Staff nonetheless describes its view of the Applicant’s Statement of Material Fact No. 17 in ¶¶ 7–13 below, in regard to the Applicant’s Statement of Material Facts Nos. 18–31, the Staff does not offer an opinion as to the analysis or conclusions drawn by the Applicant on the impacts on underground sources of drinking water from the use of deep injection wells at the proposed Turkey Point Units 6 and 7.

7. The NRC Staff contacted MDWASD and obtained reports believed to be the 2007 to 2011 SDWWTP annual reports containing the data referenced by FPL. The Staff used these reports to verify that FPL did select the highest concentrations of ethylbenzene, heptachlor, and toluene found in the reclaimed water from the SDWWTP from 2007 to 2011 to calculate the final concentrations discharged to injection wells as listed in ER Rev. 3 Table 3.6-2.

A. FPL Identified the Source Data of the Chemical Concentrations in ER Rev 3. Table 3.6-2

8. In the Wagner Declaration, FPL identified the SDWWTP annual reports for the years 2007 through 2011 prepared by the MDWASD and filed with the Underground Injection Control Program of the Florida as the source of the data used to determine the estimated concentrations of ethylbenzene, heptachlor, tetrachloroethylene, and toluene reported in ER Rev. 3 Table 3.6-2. See Motion, Attachment 2, at 3 ¶ 6. The actual reports were not provided to the NRC Staff by FPL, though values from these reports were summarized by FPL in Table 1 of the response to NRC Request for Additional Information (RAI) H4.2-2 (5765).

B. The Staff Verified That the Data From the SDWWTP Were Used to Select Source Data for Calculations of the Chemical Concentrations in ER Rev 3 Table 3.6-2

9. In order to verify source concentrations used by FPL, the Staff independently obtained reports from MDWASD on July 31, 2012, that we believe to be the reports referenced by FPL. These reports are:

- a. South District WWTP–2007 Annual Wastestream Analysis Sampling Results. Included as attachment to letter dated April 24, 2007 from Vicente E.

Arrebola, P.E. (SDWWTP) to Joseph R. May, P.G. (UIC Program Manager FDEP) containing results for KSA Laboratory Combined Effluent Sample Number Q001359-01. (ADAMS Accession No. ML12219A155)

- b. South District WWTP–2008 Annual Wastestream Analysis Sampling Results. Included as attachment to letter dated April 29, 2008 from Vicente E. Arrebola, P.E. (SDWWTP) to Joseph R. May, P.G. (UIC Program Manager FDEP) containing results for Genapure Laboratory Combined Effluent Sample Number L246684-2. (ADAMS Accession No. ML12219A156)
- c. South District WWTP–2009 Annual Wastestream Analysis Sampling Results. Included as attachment to letter dated April 15, 2009 from Vicente E. Arrebola, P.E. (SDWWTP) to Joseph R. May, P.G. (UIC Program Manager FDEP) containing results for Genapure Laboratory Combined Effluent Sample Number 901842001. (ADAMS Accession No. ML12219A157)
- d. South District WWTP–2010 Annual Wastestream Analysis Sampling Results. Included as attachment to letter dated April 12, 2010 from Vicente E. Arrebola, P.E. (SDWWTP) to Joseph R. May, P.G. (UIC Program Manager FDEP) containing results for XENCO Laboratory SD-Combined Effluent Sample Number 363251-001. (ADAMS Accession No. ML12219A158)
- e. 2011–Reclaimed Water Analysis Report. Included as attachment to letter dated December 5, 2011 from Vicente E. Arrebola, P.E. (SDWWTP) to Michael Hambor (Compliance and Enforcement FDEP) containing results for XENCO Laboratory SD-Combined Effluent Sample Numbers 407304-001 and 407304-002. (ADAMS Accession No. ML12220A391)

10. The Staff compared the concentrations reported in the SDWWTP annual reports for the years 2007 through 2011 (listed above) for heptachlor, ethylbenzene, tetrachloroethylene, and toluene with the concentrations reported by FPL as maximum detected values in Exhibits 2, 4 and 5 of the Wagner Declaration (in Exhibit 2 as “Maximum Detected Value” and in Exhibits 4 and 5 as “Source Concentration”). Using the SDWWTP annual reports, the NRC Staff verified that FPL did select the highest reported concentrations occurring between 2007 to 2011 as the maximum detected values in Exhibits 2, 4 and 5 for three constituents: ethylbenzene, heptachlor, and toluene.

11. The Staff found that the concentration selected by FPL as the maximum detected value for tetrachloroethylene was lower than the values in the SDWWTP annual reports for the year it was detected (2007). FPL reported that the maximum detected value for tetrachloroethylene of 1.1 µg/L occurred in 2007 and was detected using EPA Test Method

524.2 (Table 1 of RAI Response H4.2-2 (5765)). However, in the 2007 annual report, the value for tetrachloroethylene resulting from this same test method (524.2) is 1.6 µg/L. Additionally, the report indicates that a tetrachloroethylene concentration of 2.0 ug/L was detected by EPA Test Method 624. This 2.0 µg/l would represent a new maximum detected value for tetrachloroethylene.

12. In sum, other than the discrepancy in the maximum detected value for tetrachloroethylene as reported in the SDWWTP annual report for 2007, the detected values reported in the SDWWTP annual reports for the years 2007 through 2011 align with the detected values reported by FPL in its Motion and the Wagner Declaration.

13. The NRC Staff further notes that it is currently developing the environmental impact statement (EIS) for the proposed Turkey Point Nuclear Power Plant, Units 6 and 7. As part of the EIS, the Staff will conduct its own independent analysis of the impacts of injection of reclaimed wastewater on groundwater. In doing so, the Staff does not plan to rely on the Applicant's method of evaluation set forth in the Motion for Summary Disposition. However, the Staff reserves the right to consider in the EIS both that method of evaluation and the FPL results stated in the Motion.

14. I declare under penalty of perjury that my statements set forth above and in my statement of professional qualifications attached hereto are true and correct to the best of my knowledge, information and belief.

Executed in Accord with 10 CFR § 2.304(d)

Daniel O. Barnhurst
Hydrologist
U.S. Nuclear Regulatory Commission
Mail Stop T7E18
Washington, DC 20555-0001
(301) 415-6653
daniel.barnhurst@nrc.gov

Executed in Rockville, MD
this 8th day of August, 2012

STAFF ATTACHMENT 2

PROFESSIONAL QUALIFICATIONS OF

DANIEL ORSON BARNHURST

EDUCATION

- 2003, M.S Geology, GPA 3.5 Brigham Young University, Provo, UT
Thesis: A Chemical, Stable and Radio-Isotopic Investigation of an Alluvial-Fill Groundwater System in a Semi-Arid Environment, Southern Utah Valley, Utah.
Advisor- Dr. Alan Mayo.
Accomplishments: Full Ride Graduate Scholarships
- 2000, B.S. Environmental Geology, GPA 3.21 Brigham Young University, Provo, UT
- 1997, A.S Natural Sciences, GPA 3.75 Ricks College, Rexburg, ID
Accomplishments: Academic Honor Role

PROFESSIONAL EXPERIENCE

U.S. Nuclear Regulatory Commission, Rockville, MD May 2008 to Present

Hydrologist (GG 1315, Grade 14)

Responsibilities include:

EIS Development for hydrology portions of 7 New Reactor Applications.

Review and analysis of groundwater and surface water models.

Hydrological analysis of potential impact at proposed facilities. Technical review areas include characterization, modeling and analysis of surface and ground area including; flow, contaminant fate and transport, water use and quality impacts and compliance.

Application and enforcement of applicable federal codes, regulations and guidance, safety and environmental technical reviews, participation in technical site audits with new reactor applicant, participation in legal licensing hearings as SME.

Contract responsibilities include; preparation of contract documents and technical guidance, coordination of review and confirmatory analyses with contractors.

Developing and maintaining professional relationships with other Federal agencies and industry.

Developing and presenting regulatory and technical training to federal agencies and national lab staff.

Review and development of guidance documents for NRC staff and industry.

Accomplishments:

Completed Reactor Technical Reviewer Qualification Program (Internal NRC)

US NRC Performance Award 2010

Washington Savannah River Co., Aiken, SC

October 2003 to May 2008

Geologist/Senior Geologist

Planning and oversight of soil, ground and surface water contaminant characterization projects at DOE RCRA/CERCLA waste sites. Activities included: sample collection and analysis, drilling, coring, geophysical logging, well installation and development, and flow measurement.

Detailed analysis of characterization data, creation of water budgets, hydrographs and potentiometric maps, isopachs, cross-sections and site conceptual models.

Modeling of groundwater flow and contaminant fate and transport to guide characterization, well network optimization and remedy selection. Activities included: data management, model creation and calibration, sensitivity analysis, remedial alternatives modeling and post-processing.

Oral and written reporting to management and state and federal regulatory agencies.

Accomplishments:

Nominated for Top Talent Corporate Rotational Program in 2005.

Promoted to Senior Scientist in 2008.

Energy Solutions (Envirocare of Utah, LLC.), SLC, UT

Summer-Fall 2002

Intern Geo-scientist, Environmental Compliance and Permitting

Responsible for collection, review, modeling and reporting of analytical data from Mixed and Hazardous Waste Storage/Disposal Facilities to Utah Division of Environmental Quality (DEQ), Radiation Control Board and Nuclear Regulatory Commission (NRC).

Washington Savannah River Co., Aiken, SC

Summer 2001

Intern Geo-scientist, Environmental Compliance and Permitting

Responsible for data collection, analysis, and report preparation and monitoring well installation.

Various Geotechnical Engineering Companies, SC and UT Summer 1998-Summer 1999

Intern Geo-scientist, Environmental Compliance and Permitting

Responsible for data collection, analysis, and report preparation and monitoring well installation.

LICENSES, CERTIFICATES AND AWARDS

Professional Geologist- State of Tennessee (Lic. #00005533)

Federal Acquisition Certification for Contracting Officer Technical Representatives (8/20/10-8/19/12)- Federal Acquisition Institute

Eagle Scout, Boy Scouts of America

RECENT PUBLICATIONS/PRESENTATIONS/JOB RELATED REPORTS

2011, October, Draft Environmental Impact Statement for Combined License (COL) for Enrico Fermi Unit 3, U.S. Nuclear Regulatory Commission and U.S. Army Corps of Engineers, NUREG-2105, (hydrology sections) .

2011, May, Final Environmental Impact Statement for Combined Operating Licenses (COLs) for Comanche Peak Nuclear Power Plant Units 3 and 4, U.S. Nuclear Regulatory Commission and U.S. Army Corps of Engineers, NUREG-1943, (hydrology sections).

2011, April, Final Environmental Impact Statement for Combined Licenses for Virgil C. Summer Nuclear Station Units 2 and 3, U.S. Nuclear Regulatory Commission and U.S. Army Corps of Engineers, NUREG-1939, (hydrology sections).

2010, Giacinto, J.F., McBride, M., Barnhurst, D.O., and N.D. Tiruneh, Hydrology 4 Pre- and Post-Construction Conceptual Model Development for Large Power Plant Construction Projects, Joint Federal Interagency Conferences on Sedimentation and Hydrology, 2ndJFIC2010, Las Vegas, NV.

2009, Tiruneh, N.D., Nicholson, T.J., Raione, R., Ahn, H., Giacinto, J., Barnhurst, D., and M. McBride, Significance of Site-Specific Hydrogeologic Parameters in the Analysis of Radionuclide Transport at New Nuclear Reactor Sites, Eos Trans. AGU, 90(52), Fall Meeting Suppl., Abstract H43F-1081.

2009, Nicholson, T.J., Raione, R., Ahn, H., Barnhurst, D., Giacinto, J., McBride, M., and N.D. Tiruneh, Optimizing Characterization of Site Hydrology in Support of New Reactor Licensing at the U.S. Nuclear Regulatory Commission (Invited), Eos Trans. AGU, 90(52), Fall Meeting Suppl., Abstract H53N-01.

RELEVANT COURSEWORK AND RECENT TRAINING

Coursework: Advanced Hydrogeology, Advanced Hydrogeochemistry, Seepage and Groundwater Modeling, Contaminant Transport, Borehole and Applied Geophysics, Advanced Stratigraphy, Advanced Structure

Training:

3/12- Watershed Modeling System (WMS)- Hydrologic and hydraulic modeling for floodplain mapping, forecasting and flood analysis. Graphical user interface (GUI) for HEC1, HEC-HMS, TR-20, TR-55, GSSHA, NSS and others

9/11- Visual Modflow- Groundwater Flow and Contaminant Transport Modeling

4/11- CORMIX Mixing Zone Modeling Workshop- modeling of thermal and chemical impacts to surface water bodies.

8/10 Hydrologic Modeling with HEC-HMS, USACE, Davis, Ca.5/09 RESRAD Onsite and Offsite Training- Argonne National Laboratory, Rockville, MD

6/09 The Law of NEPA, Duke University Nicholas School of the Environment and Earth Sciences.

6/09 Determining Cumulative Impacts through NEPA, Duke University Nicholas School of the Environment and Earth Sciences.

9/08 Isotopic and Hydrogeological Characterization of Fractured Rock Settings- NGWA, Denver, CO

7/08 PORFLOW Training- using PORFLOW to model any subsurface flow system for analysis of coupled flow, heat and mass transfer, radioactive decay, chemical reaction and phase change.

COMPUTER PROFICIENCY

Proficiency is listed as good, fair or poor

Groundwater Modeling System 6.5 (GUI for MODFLOW, MODPATH, MT3D) (good), ArcMAP (good), SURFER (good), LANDMARK (fair), RESRAD 6.4 (fair).

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

CERTIFICATE OF SERVICE

I hereby certify that copies of the "NRC STAFF'S ANSWER TO APPLICANT'S MOTION FOR SUMMARY DISPOSITION OF AMENDED CONTENTION 2.1" has been served upon the following persons by Electronic Information Exchange this 8th day of August, 2012:

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Dated at Rockville, Maryland
this 8th day of August, 2012