

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 130007-EI

IN RE: ENVIRONMENTAL COST RECOVERY CLAUSE

DIRECT TESTIMONY AND EXHIBITS

OF

KATHY A. FRENCH, P.E.

ON BEHALF OF

**DESOTO COUNTY GENERATING
COMPANY, LLC**

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1 BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

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3 ON BEHALF OF

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6 SEPTEMBER 13, 2013

7
8 **DeSOTO ENVIRONMENTAL PERMITS**

9 **AND OPERATIONS**

10
11 **Q. Please state your name and business address.**

12 A. My name is Kathy A. French, and my business address is 400 Chesterfield Center,
13 Suite 110, Chesterfield, Missouri 63017.

14
15 **Q. By whom are you employed and in what capacity?**

16 A. I am employed by LS Power Development, LLC as Assistant Vice President,
17 Environmental. LS Power Development, LLC is the indirect owner of DeSoto
18 County Generating Company, LLC, which owns the DeSoto Generating Facility.

19
20 **Q. Please describe LS Power.**

21 A. LS Power Development, LLC is part of the LS Power Group (LS Power). Founded in
22 1990, LS Power is a privately-held company engaged, through its subsidiaries, in the
23 development, acquisition, and management of power generating and electric

1 transmission infrastructure throughout the United States. LS Power and its
2 subsidiaries have developed, constructed, managed or acquired more than 27,000
3 MW of competitive power generation and 470 miles of transmission infrastructure,
4 for which we have raised more than \$22 billion in debt and equity financing.

5 LS Power has two primary lines of business: development activities through
6 LS Power Development, and investment management activities through LS Power
7 Equity Advisors. LS Power Development has developed more than 8,000 MW of
8 power generation facilities throughout the United States, with a combined capital cost
9 of approximately \$7 billion. As a developer, LS Power Development identifies the
10 need for new power generation resources and works with our customers – including
11 investor-owned utilities, regional power pools, electric cooperatives, and municipal
12 utilities – to deliver competitively priced electricity to those customers on a wholesale
13 basis. Our current development efforts reflect a diverse mix of power generation
14 facilities, including those fueled by natural gas and solar energy. Additionally, LS
15 Power Equity Advisors is an established investment manager with \$4.3 billion in
16 equity capital across two private equity funds. LS Power Equity Advisors' focus is to
17 acquire operating power generation assets and utilize our development, operations,
18 power marketing, and financial expertise to improve their commercial and physical
19 operations. Since their inception, the private equity funds have acquired and
20 managed more than 18,000 MW of generation capacity.

21

1 **Q. Please summarize your responsibilities as Assistant Vice President,**
2 **Environmental for LS Power.**

3 A. I manage the environmental compliance for the company's fleet of 16 operating
4 power plants including review of filings to state and federal agencies, audits of permit
5 compliance and plant incorporation of environmental best practices. I also am
6 responsible for environmental components of the company's acquisition and sale of
7 assets and review of pending and issued regulations of the United States
8 Environmental Protection Agency (EPA) and state regulations to evaluate
9 applicability and any changes necessary for the power plants to remain in compliance
10 with all new rules as they come out.

11

12 **Q. Please summarize your educational background and professional experience.**

13 A. I received a Bachelor of Science degree in General Engineering from Harvey Mudd
14 College in Claremont, California and a Master of Science degree in Environmental
15 Engineering from Drexel University in Philadelphia, Pennsylvania.

16 From 1998 until 2001, I worked for Total Containment, Inc., where my duties
17 included oversight on a multi-site petroleum products pipe replacement program to
18 ensure that the required replacements at all sites were completed, and as the
19 company's representative in underground storage tank inspections for leaking or
20 contaminated sites.

21 From 2001 until 2009, I worked for LS Power, where my duties included
22 management of environmental aspects of new development activities, including

1 permitting, and starting in 2009 my duties were modified to incorporate acquisitions
2 and oversight of operating assets.

3
4 **Q. Please summarize any specific experience that you have with respect to**
5 **managing environmental control systems and environmental permitting and**
6 **compliance for electrical power plants.**

7 A. My present responsibilities include supervising the renewal of environmental permits
8 and compliance activities for the DeSoto Generating Facility (Facility) and other
9 electrical power plants owned and operated by LS Power. My experience also
10 includes filing for and obtaining greenfield permits for electrical power facilities and
11 supervising environmental and engineering consultants to ensure that filings made
12 include all the required demonstrations such as compliance with the National
13 Ambient Air Quality Standards via modeling conducted according to EPA and state
14 regulations and requirements. My experience also includes review of proposed EPA
15 regulations and formally commenting on aspects of those regulations which would
16 not be feasible or practical based on the operating experience of the LS Power fleet.
17 I have also served as an expert witness in Georgia and Texas on the compliance of air
18 and water permit applications and permits with the required state and federal rules
19 and regulations under which they were issued.

20

1 **Q. Do you hold any professional certifications or other special qualifications that**
2 **are relevant to your testimony to the Florida Public Service Commission in this**
3 **case?**

4 A. Yes, I am a registered Professional Engineer in the State of Missouri.
5

6 **Q. Have you previously testified in proceedings before utility regulatory**
7 **commissions or in other administrative proceedings?**

8 A. I have previously testified in administrative hearings for Prevention of Significant
9 Deterioration (PSD) air permits in Texas and Georgia, a hazardous air permit
10 determination in Georgia and a water discharge permit in Texas. A complete listing
11 of my testimony experience is provided in Exhibit ____ (KAF-1).
12

13 **Q. Are you sponsoring any exhibits to your testimony?**

14 A. Yes. Exhibit No. ____ (KAF-1) is a copy of my resumé.
15

16 **Q. What is the purpose of your testimony in this proceeding?**

17 A. I am testifying on behalf of DeSoto County Generating Company, LLC (DeSoto), to
18 describe the Facility's environmental control systems and its environmental
19 compliance history and current status. My testimony also addresses the similarities
20 between the Facility's environmental characteristics and those of the combustion
21 turbines proposed by Florida Power & Light Company (FPL) in this case.
22
23

1 **Q. Please summarize the main conclusions of your testimony.**

2 A. In summary, the Facility operates with dry low-NOx combustion equipment and
3 water injection capability for oil firing, in full compliance with its permits issued by
4 the Florida Department of Environmental Protection. The Facility's environmental
5 characteristics are quite similar to the combustion turbine units proposed by FPL in
6 this case.

7 In particular, although the DeSoto Facility is not subject to the 1-Hour
8 National Ambient Air Quality Standard (NAAQS) for Nitrogen Dioxide (NO₂), or
9 required by any other environmental rule or regulation to meet a one-hour NO₂
10 emissions standard, modeling performed by the Florida office of an independent
11 consulting firm confirmed that the Facility would meet the 1-Hour National Ambient
12 Air Quality Standard for Nitrogen Dioxide (NO₂) at the site boundary of the Facility.
13 Therefore, the Facility would satisfy FPL's desire for combustion turbine capacity
14 that would meet the 1-Hour NAAQS Standard for NO₂.

15

16 **Q. Please describe the DeSoto Generating Facility.**

17 A. The Facility consists of two General Electric Frame 7241FA combustion turbines
18 (CTs) with summer net generating capability of 310 megawatts (MW) when firing
19 natural gas. The Facility is located in Arcadia, Florida and is interconnected to FPL's
20 transmission system at the FPL Whidden substation. The Facility is also
21 interconnected to the Florida Gas Transmission Company (FGT) natural gas pipeline.
22 Additionally, the Facility is capable of operating on No. 2 (diesel) fuel and has on-site
23 backup fuel capability of 1.5 million gallons, which is sufficient for approximately 54

1 hours of full load operation with both combustion turbines running. The Facility
2 achieved commercial operation in June 2002.

3

4 **Q. Is the DeSoto Generating Facility located in a “non-attainment” area? If so,
5 please describe.**

6 A. No, according to the EPA Greenbook, DeSoto County, Florida is classified as being
7 in “attainment” status for all pollutants.

8

9 **Q. Please describe the environmental permits and requirements that apply to the
10 DeSoto Generating Facility.**

11 A. The Facility has a Title V air permit, effective January 1, 2013, expiring December
12 31, 2017, which incorporates all the air-related requirements for the Facility including
13 allowed operating profiles for the gas turbines, authorization for combustion of fuel
14 oil and all emissions from the site. The Title V air permit also incorporates the Title
15 IV acid rain permit and Clean Air Interstate Rule permits regulating emissions
16 reporting and allowance requirements for sulfur dioxide (SO₂) and nitrogen oxides
17 (NO_x) emissions. The Facility also has a water use general permit from the
18 Southwest Florida Water Management District governing the consumptive use of
19 groundwater from the plant’s three on-site wells and an Environmental Resource
20 Permit for the surface water management system.

21

1 **Q. Please summarize the environmental control equipment and environmental**
2 **compliance programs and measures that DeSoto employs to ensure that the**
3 **Facility complies with its permits and other environmental requirements.**

4 A. The Facility controls air emissions from the turbines through (1) integrated low-NOx
5 burners which are part of the turbine equipment and control the gas burning process
6 to limit NOx formation; and (2) water injection for use during oil firing to
7 additionally manage the burn conditions to limit NOx formation. Both of these
8 systems are integrated into the turbine packages and managed as part of the turbine
9 control software. That software also manages the startup and shutdown processes to
10 efficiently start and stop the units to minimize emissions. In addition to the NOx
11 control, the advanced burner design employed at the Facility also reduces incomplete
12 combustion to minimize carbon monoxide, volatile organic compound, and
13 particulate matter emissions. On a more general level, the Facility utilizes a computer
14 reminder system to ensure maintenance activities are completed to keep the units and
15 systems running correctly and to ensure that required environmental and other
16 activities are completed as required. The operations team for the plant also conducts
17 monthly calls with myself and other LS Power team members to track open issues
18 and upcoming filings and to ensure that all items are properly closed out and
19 necessary filings or inspections are timely made.

20
21 **Q. Please describe the Facility's environmental compliance record.**

22 A. Since the DeSoto Facility came on-line in 2002, it has operated reliably and in full
23 compliance with its permits and all applicable environmental regulations, except that

1 in 2005, under a prior owner, not affiliated with LS Power, two environmental
2 compliance filings were not timely made and the state issued a \$2,150 fine, which
3 was paid by the owner at the time.
4

5 **Q. Is the Facility subject to any limit or limits for emissions of nitrogen dioxide**
6 **(NO₂)?**

7 A. Yes. The Facility is subject to a limit on the concentrations of NO₂ emissions in the
8 Facility's exhaust stream of 9 parts per million (PPM) when firing gas and 42 PPM
9 when firing oil. The Facility is also subject to an annual limit on hours of operation
10 of an average of 3,390 hours with each turbine restricted to no more than 5,000 hours
11 per year. Fuel oil firing is also limited to 1,000 hours per year.
12

13 **Q. Is the DeSoto Facility subject to any rule, regulation, permit requirement, or**
14 **other requirement that limits the Facility's emissions of NO₂ measures on a 1-**
15 **hour basis?**

16 A. No. The most restrictive limit in a permit is a 3-hour emission limit for oil firing for
17 NO_x.
18

19 **Q. How do the operating and environmental characteristics of the CTs at the**
20 **Facility compare to those of the CT units that FPL plans to install?**

21 A. The best available information indicates that the Facility's operating and
22 environmental characteristics are quite similar to those of the CTs that FPL proposes
23 to install. According to the testimony of Michael DeBock, one of FPL's witnesses in

1 this docket, FPL is using cost and operating characteristics consistent with those of
2 GE 7FA.05 CT technology. The CT units at the DeSoto Generating Facility are GE
3 7241FA units, which are very similar to the 7FA.05 CTs contemplated by FPL.
4 Specifically, a permit issued by the Florida Department of Environmental Protection
5 to another unrelated plant in April 2012 determined the appropriate permit limits for
6 7FA.05 CTs to be the same for NOx as contained in the Facility's permit. So from an
7 allowed NOx emissions perspective, there is no difference between the two
8 technologies.

9
10 **Q. Are you aware of the EPA's proposed 1-Hour National Ambient Air Quality**
11 **Standard for Nitrogen Dioxide (NO2)?**

12 A. Yes, I am.

13
14 **Q. If the proposed 1-Hour NO2 Standard were to become applicable to the Facility,**
15 **would the Facility be in compliance?**

16 A. Yes. DeSoto engaged the Florida office of an independent environmental consulting
17 company to model the NO2 emissions of the DeSoto Facility, and the results of that
18 modeling indicates that the Facility would be in compliance with the 1-Hour NO2
19 NAAQS Standard if it were to become applicable to the Facility.

20
21 **Q. Does this conclude your testimony?**

22 A. Yes.

23

Kathy A. French, P.E.

EDUCATION

- Master of Science, Environmental Engineering, Drexel University, Philadelphia, PA, March 1999
- Bachelor of Science, General Engineering, Harvey Mudd College, Claremont, CA, May 1997

PROFESSIONAL REGISTRATIONS AND AFFILIATIONS

- Missouri Professional Engineer # 2004017169, June 2004
- Engineer in Training, Jan. 1997
- Member Air & Waste Management Association, 2001 – present
- Member National & Missouri Society of Professional Engineers, 2004 – present
- Member American Society of Civil Engineers, 2004 – present

WORK EXPERIENCE

Mar. 2001 – Present Project Engineer; Environmental Manager, Assistant Vice President, Environmental - LS Power Development, LLC

Responsible for environmental permitting of new projects, environmental compliance of operating assets, the environmental component of due diligence efforts and supervision of the environmental team for LS Power. Specific tasks for the team include preparation of PSD, NPDES, USACE and other permit applications for new power plants and transmission lines, management of the permitting process, and ensuring compliance with issued permits.

Aug. 1998 – Mar. 2001 Design Engineer; Technical Systems Engineer - Total Containment Inc.

Responsible for maintaining regulatory approval for manufacturing and field service operations. Served as the company representative to Underwriter's Laboratories for the flexible piping Technical Advisory Committee. Part of engineering design team for new products.

EXPERT WITNESS EXPERIENCE

- February 2011 - Expert Witness on Longleaf Energy Station Hazardous Air Pollutant minor source determination, Office of State Administrative Hearings Docket No. OSAH-BNR-AQ-1115157-60-Howells, Re: Application of Longleaf Energy Associates, LLC, for PSD Permit No. 4911-099-0030-P-01-1.
- October 2007 – Expert Witness on Longleaf Energy Station PSD application, Office of State Administrative Hearings Docket No. OSAH-BNR-AQ-0732139-60-Howells, Re: Application of Longleaf Energy Associates, LLC, for PSD Permit No. 4911-099-0030-P-01-0.
- July 2006 – Expert Witness on Sandy Creek Energy Station processes and proposed operation and TPDES application, State Office of Administrative Hearings Docket 582-06-2038 and Texas Commission on Environmental Quality Docket No. 2006-0402-IWD, Re: Application of Sandy Creek Energy Associates, L.P., for TPDES Permit No. WQ0004755000.
- November 2005 – Expert Witness on PSD application, BACT, and other related matters, State Office of Administrative Hearings Docket 582-05-5612 and Texas Commission on Environmental Quality Docket 2005-0781-AIR, Re: Application of Sandy Creek Energy Assoc., L.P., for Air Quality Flexible Permit No. 70861 and PSD Permit No. PSD-TX-1039.

OTHER AIR EXPERIENCE

- December 2012 to April 2013 – Application for modification of construction permit, LSP University Park Energy Station, University Park, Illinois. Managed consultants conducting air quality compliance modeling for major modification. Permit modification issued July 2013.
- Feb - May 2012 – Title V permit renewal application, DeSoto County Energy Park. Managed process to prepare and file application and review draft permit. Permit issued September 2012.
- Jan – June 2012 – Title V permit renewal applications for LSP University Park Energy Station, University Park Energy and Tilton Energy Center, University Park and Tilton, Illinois. Managed consultants to prepare and issue applications.
- November 2010 – May 2011 – Permit modification to hazardous pollutant area source application, Sandy Creek Energy Station, Riesel, Texas, worked with consultants to prepare application for 900 MW coal plant to be area source. Modified permit issued May 2011.
- Jan – July 2011 – PSD Permit and application update to as-built conditions, Sandy Creek Energy Station, Riesel, Texas, worked with consultants to modify application, air quality modeling and impacts determination for 900 MW coal plant to as-built conditions. Modified permit issued June 2012.
- March 2010 – Present – Member Air Quality Advisory Committee, Heart of Texas Council of Governments, McLennan County, Texas.
- March 2010 – December 2010 – Application for extension of PSD permit, West Deptford Energy Station, West Deptford, New Jersey. Managed consultants conducting 1-hour NO₂ and SO₂ modeling; prepared application and managed issuance of the permit extension.
- November 2009 – Present – EPA Designated Representative or Alternate Designated Representative, 10 facilities.
- July 2007 – 2009 – Part of LS Power team in participation in Department of Energy Long-Term Carbon Injection Field Test for >90% Mercury Removal for a PRB Unit with a Spray Dryer and Fabric Filter, DOE Award number DE-FC26-06NT42774.
- February 2007 – Application for Modification of the ADEQ Operating Permit for the Plum Point Energy Station Mississippi County, Arkansas. Provided technical assistance on emission calculations and Class I modeling.
- May 2006 – March 2007 - LS Power representative – Georgia Environmental Protection Division Clean Air Interstate Rule (CAIR) Regulation Meetings.
- April 2006 – May 2007 – LS Power representative – Arkansas Department of Environmental Quality Clean Air Interstate Rule (CAIR) Regulation Development Stakeholder Committee.
- November 2005 as updated December 2005 – Permit Modification for Plum Point Energy Station, Provided technical assistance on emission calculations. Permit modification issued May 2006.

- August 2005- Application for a CAAPP and PSD Permit Modification for LSP-Kendall Energy, LLC, LS Power lead in application preparation with Illinois consultant.
- November 2004 and updates – Prevention of Significant Deterioration Permit Application for the Longleaf Energy Station, Early County, Georgia. Primary author of application including BACT, emission calculations, additional analyses, process description, regulatory applicability, and alternatives analyses. Managed environmental consultants conducting air quality modeling. Lead in negotiating the permit issued May 2007.
- January 2004 as updated March 10, 2005 – Application for Flexible Permit for the Sandy Creek Energy Station, McLennan County, Texas (PSD permit application), LS Power lead in development of application with Texas PE. Provided emission calculations, regulatory applicability, Maximum Achievable Control Technology Analysis (MACT), BACT information, and additional analyses. Lead in negotiating the permit issued July 2006.
- September 2001 – Prevention of Significant Deterioration (PSD) Permit Application for a Coal Fired Power Generation Project, Plum Point Energy Station. Co-author of application including BACT, emission calculations, Class I modeling, process description, regulatory applicability, and alternatives analysis. Managed Class II modeling consultant. Permit issued October 2003. Currently operational.

BIBLIOGRAPHY

- Master's Thesis – “Modeling *Cryptosporidium* Removal in Drinking Water by Physical Processes”, Drexel University, March 1999.
- Primary Author of “Meta-Analysis of *Cryptosporidium* Removal in Treatment: Dissolved Air Flotation” presented at the 1999 International Association of Water Quality Conference, Paris, France, April 1999.
- Co-author of “A Novel Technique for Investigating Flocculation of Dispersions for Die Coating” presented at the 1998 9th International Coatings Science and Technology Symposium