Direct Testimony
Mark Stege

Before the Public Service Commission
of the State of Wyoming

Joint Application of
Cheyenne Light, Fuel and Power Company and
Black Hills Power, Inc.
For a Certificate of Public Convenience
and Necessity for a Gas-Fired
Electric Generating Power Plant and
Related Facilities

Docket No.20003-____-EA-11

Docket No. 20002-____-EA-11

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EXHIBIT
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I. INTRODUCTION AND BACKGROUND

1 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A. Mark Stege, 108 West 18th Street, Cheyenne, Wyoming, 82001.

3 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

4 A. I am the Vice President of Operations for Cheyenne Light, Fuel and Power Company

5 ("Cheyenne Light").

6 **Q. FOR WHOM ARE YOU TESTIFYING ON BEHALF OF TODAY?**

7 A. I am testifying on behalf of Cheyenne Light.

8 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND BUSINESS BACKGROUND.**

9 A. I graduated from the University of Wyoming with a B.S. in Geology and from the

10 University of Northern Colorado with a B.S. in Accounting. I am a licensed certified

11 public accountant in the states of Wyoming and Kansas.

12 I joined Black Hills Corporation in 1995 as an internal auditor and held various auditing

13 and accounting positions within Black Hills Corporation (including Director of

14 Accounting, Generation Assets) until June of 2005 when I accepted the position of

15 Director of Customer Service with Cheyenne Light. I was promoted to General Manager

16 in March of 2007 and held that position until I was assigned to my current position of

17 Vice President – Operations in July 2008.

18 **Q. PLEASE DESCRIBE YOUR RESPONSIBILITIES AS VICE PRESIDENT OF**

19 **OPERATIONS FOR CHEYENNE LIGHT.**

20 A. My role as Vice President of Operations is to provide vision, leadership and strategic

21 direction for all areas of Cheyenne Light's business operations including both natural gas

22 and electric utility service.

II. PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. My testimony will provide an overview of Cheyenne Light's operations, discuss the growth experienced and expected in Cheyenne Light's service territory, discuss and support the decision to build and wholly own a simple cycle combustion turbine and jointly own a combined cycle resource and give an executive summary of this Application.

III. CHEYENNE LIGHT COMPANY OVERVIEW

Q. PLEASE GIVE A BASIC OVERVIEW OF CHEYENNE LIGHT'S BUSINESS OPERATIONS.

A. Cheyenne Light is a subsidiary of Black Hills Corporation that serves approximately 39,000 electric customers and 35,000 natural gas customers in the city of Cheyenne, Wyoming and portions of Laramie County. These areas make up more than 1,200 square miles of certificated territory with approximately 85,000 residents. Cheyenne Light has approximately 85 employees and is further supported by its parent, Black Hills Corporation, and affiliates. Cheyenne Light operates and maintains approximately 1,023 miles of electric distribution and 24 miles of electric transmission lines. Cheyenne Light also operates and maintains approximately 29 miles of high pressure gas transmission pipeline, 73 miles of intermediate pressure gas transmission pipeline and approximately 750 miles of distribution pipeline.

Q. DESCRIBE THE CHANGING CHARACTERISTICS OF CHEYENNE LIGHT'S TERRITORY.

1 A. Cheyenne/Laramie County has seen an increase in commercial and industrial activity in
2 recent years. This is in large part due to its strategic location. Cheyenne is the northern
3 anchor city of the Front Range region of the Rocky Mountains. Cheyenne is strategically
4 located at the intersections of Interstate 80 and Interstate 25 and two major railroads.
5 This location also gives Cheyenne businesses access to national fiber optic networks
6 along the I-80 corridor which is a major electronic switching center with many high-
7 speed data services. In addition, Wyoming also offers a number of tax advantages that
8 encourage growth:
9 - No personal state income taxes;
10 - No corporate state income taxes;
11 - No inventory taxes; and
12 - Low property taxes.
13 All of this combined with readily available land in any of the three industrial business
14 parks in Cheyenne (North Range Business Park, East Business Park and Swan Ranch
15 Business Park) make it attractive for new industry to relocate to this area.

16 **IV. CURRENT GENERATING RESOURCES**

17 **Q. WHAT GENERATING RESOURCES DOES CHEYENNE LIGHT ROUTINELY**
18 **UTILIZE TO SERVE ITS ELECTRIC CUSTOMERS?**

19 A. Cheyenne Light owns a coal-fired plant commonly referred to as Wygen II. Wygen II
20 has a capacity of approximately 90 MW and was commercially available in 2008. In
21 addition to this owned generation, Cheyenne Light has two power purchase agreements
22 (PPA) with its non-regulated affiliate, Black Hills Wyoming, LLC. Under those PPAs,
23 Cheyenne Light purchases power from Wygen I, a coal-fired plant, and "CT2", a natural

gas-fired combustion turbine with a gross generating capacity of approximately 40 MW. This purchased capacity accounts for approximately 100 MW. Wygen I, Wygen II and CT2 are all located near Gillette, Wyoming. In addition to the CT2 and Wygen I PPA's, Cheyenne Light utilizes 15 MW of wind-generated power from Happy Jack Windpower, LLC and 10 MW of wind-generated power from Silver Sage Windpower LLC, unaffiliated renewable energy generators.

Q. WHAT IS THE LONG TERM FORECAST OF THESE PPAS?

A. The Happy Jack and Silver Sage PPAs expire in 2028 and 2029, respectively. The CT2 PPA expires in 2014. Cheyenne Light's resource plan anticipates that the Wygen I PPA will be replaced in kind upon its expiration in 2022.

V. LOAD GROWTH

Q. DESCRIBE THE GROWTH BOTH EXPERIENCED IN CHEYENNE AND ANTICIPATED IN THE CHEYENNE LIGHT SERVICE TERRITORY.

A. Cheyenne Light is expecting greater customer demand for electricity due to the growth in recent months in the Swan Ranch area as well as both North Range Business Park and East Business Park (commonly referred to as the Cheyenne LEADS Business Parks). The projected loads range from 8 to 12 MW to serve the customers who have confirmed or are already under construction in the Cheyenne area business parks stated above. This load increase is expected to occur between 2012 and 2014. It is anticipated that these commercial customers will increase their load substantially in future years. In addition, the expected employment opportunities may increase residential load because of the necessary housing for the employees of these operations.

Q. HOW IS CHEYENNE LIGHT POSITIONED TO SERVE THIS GROWTH?

1 A. Cheyenne Light has been reviewing options related to expanding its distribution and
2 generation infrastructure. Additional construction of electrical infrastructure is planned
3 to serve ordinary growth in Cheyenne Light's service territory beginning in early 2012
4 through 2014. This Application is in response to our need to fulfill the generation needs
5 resulting from customer growth.

6 **Q. HOW HAS THAT GROWTH BEEN SERVED TO DATE?**

7 A. As discussed above, Cheyenne Light has served its load with a combination of owned
8 generating resources, PPAs and firm energy purchases.

9 **Q. WHY IS IT NECESSARY TO BUILD NEW GENERTION NOW INSTEAD OF**
10 **CONTINUING TO SERVE THAT LOAD WITH EXISTING RESOURCES AND**
11 **FIRM ENERGY PURCHASES?**

12 A. Cheyenne Light's need is too large to economically serve solely with firm energy
13 purchases. Cheyenne Light would have to acquire additional PPAs to serve the
14 anticipated load and provide for adequate capacity reserve margins. As discussed in the
15 testimony of Kyle White, there are several benefits to utility owned generation and
16 Cheyenne Light believes that continuing to expand the generation procured through PPAs
17 rather than owning generation opens Cheyenne Light and its customers up to risks such
18 as price instability, unregulated rate of return and the unavailability of economical
19 purchased power.

20 **Q. DESCRIBE CHEYENNE LIGHT'S RECENTLY APPROVED ENERGY**
21 **EFFICIENCY PLAN.**

22 A. In January 2011, the Wyoming Public Service Commission approved Cheyenne Light's
23 Energy Efficiency Plan. The Energy Efficiency Plan, effective June 9, 2011, is aimed at

1 helping our residential and commercial customers use energy more efficiently. The
2 Energy Efficiency Plan consists of a combination of customer education, customer
3 rebates (and other financial incentives), and technical assistance in order to increase the
4 adoption of cost effective energy efficiency measures. The approved Energy Efficiency
5 Plan consists of a Natural Gas Plan and an Electric Plan. The proposed electric savings –
6 year one - is approximately 5,500,000 kWh. It is still too soon to determine the
7 achievability of the anticipated savings; however, the integrated resource plan included
8 with the testimony of Eric Scherr assumes that Cheyenne Light will achieve its projected
9 electricity savings from the Energy Efficiency Plan.

10 **Q. HAS CHEYENNE LIGHT APPROACHED ITS LARGER CUSTOMERS TO**
11 **DISCUSS INTERRUPTIBLE RATES OR OTHER PEAK SHAVING**
12 **OPPORTUNITIES?**

13 A. Yes, Cheyenne Light has engaged in discussions with its two largest customers to
14 determine the interest in alternative pricing options. While these discussions are ongoing,
15 it is unlikely that significant peak shaving or interruptible rates can be agreed upon due to
16 the load characteristics of these customers.

17 **Q. IS CHEYENNE LIGHT ACTIVE IN THE ECONOMIC DEVELOPMENT**
18 **EFFORTS OF THE CITY OF CHEYENNE?**

19 A. Yes. Cheyenne Light is an active partner in the city of Cheyenne's economic
20 development activities including presence on the Board of Cheyenne – Laramie County
21 Corporation for Economic Development (LEADS). Cheyenne Light has discussed
22 specific rate opportunities with new and potential customers and will continue to work
23 with businesses to design business accommodating rates to the extent possible.

1 **Q. WHAT IS CHEYENNE LIGHT'S CURRENT PEAK?**

2 A. Cheyenne Light experienced a new peak demand on July 18, 2011 of 181 MW.

3 **Q. IN YOUR OPINION, WHAT IS THE MOST EFFECTIVE WAY TO CONTINUE**
4 **TO SERVE THE CHEYENNE AREA GIVEN BOTH THE EXPERIENCED AND**
5 **PROJECTED GROWTH OF THE COMMUNITY?**

6 A. Given the opportunity that has been presented to us to jointly own a combined cycle
7 resource; I believe Cheyenne Light's service territory is best served by the addition of
8 both a jointly owned combined cycle combustion turbine and a wholly owned simple
9 cycle combustion turbine. The addition of this owned generation at Cheyenne Light's
10 load source adds reliability and price stability for its customers for years to come.

11 **Q. IN YOUR OPINION, IS OWNERSHIP OF A SIMPLE CYCLE TURBINE AND**
12 **JOINT OWNERSHIP IN A COMBINED CYCLE COMBUSTION TURBINE**
13 **ADEQUATE TO SERVE CHEYENNE LIGHT'S NEEDS?**

14 A. Yes. Cheyenne Light's IRP identified a need for 93 MW in 2014 to serve its generation
15 and capacity needs and selected the addition of three simple cycle combustion turbines
16 (the "IRP Plan") to fill that need. While the proposed resource additions will only
17 provide approximately 77 MW of generation, Cheyenne Light will have ownership in an
18 intermediate unit that is more economical to operate than a peaking unit. Cheyenne Light
19 may have to purchase a small amount of capacity to meet its obligations, but in exchange
20 it will be mitigating the risk of energy purchases if the economy energy market is not
21 available by owning a more cost effective intermediate resource and diversifying its
22 resource portfolio. In addition, Cheyenne Light will be delaying additional generation
23 resources which will result in an ability to further assess the growth in the Cheyenne area

1 expected over the next few years. In addition, it will result in a lower present value
2 revenue requirement in 2014 for Cheyenne Light's customers than the IRP Plan.

3 **Q. CHEYENNE LIGHT FILED A CPCN ON AUGUST 1, 2011. WHAT IS THE**
4 **STATUS OF THAT FILING?**

5 A. Cheyenne Light's August 1 CPCN filing requested the addition of three simple cycle
6 combustion turbines. For the reasons described in this Application, Cheyenne Light is
7 requesting the approval to build a wholly owned simple cycle combustion turbine and a
8 jointly owned combined cycle resource. A motion to withdraw the August 1 CPCN filing
9 has been filed with the Wyoming Public Service Commission.

10 **VI. INTRODUCTION OF WITNESSES**

11 **Q. PLEASE INTRODUCE THE OTHER WITNESSES IN THIS PROCEEDING.**

12 A. The other witnesses providing written direct testimony and exhibits and the subject
13 matter of each are listed below.

14 **Richard Loomis, Black Hills Power, Vice President of Operations**

15 Mr. Loomis' testimony gives an overview of Black Hills Power's operations including its
16 current generating resources.

17 **Kyle White, Vice President of Resource Planning and Regulatory Affairs**

18 Mr. White's testimony includes an overview of Black Hills Corporation, support for the
19 resources selected to serve Cheyenne Light and Black Hills Power and operational
20 arrangements associated with joint ownership.

21 **Jill Tietjen, President and CEO of Technically Speaking**

22 Ms. Tietjen's testimony gives an overview of utility resource planning.

23 **Diane Crockett, Lead Consultant for Ventyx Inc.**

Ms. Crockett's testimony includes a discussion of the process that Ventyx used in the Cheyenne Light IRP and Black Hills Power IRP.

Eric Scherr, Resource Planning Engineer

Mr. Scherr will provide a description of the integrated resource planning analysis undertaken by Cheyenne Light and Black Hills Power. In addition, Mr. Scherr will discuss additional modeling undertaken following the completion of the Black Hills Power IRP and the presentation of the opportunity to Cheyenne Light to jointly own a combined cycle rather than the resources selected in the Cheyenne Light IRP.

Fred Carl, Director of Environmental Services

Mr. Carl's testimony provides a summary of environmental initiatives affecting Black Hills Power and Cheyenne Light.

Dr. Robert Pearson, Vice President of Environmental Services for CH2M Hill

Mr. Pearson provides testimony in support of the study performed by Black Hills Power to assess costs associated with retrofitting generating resources to comply with environmental initiatives.

Mark Lux, Vice President and General Manager, Regulated and Non-Regulated Generation

Mr. Lux presents detailed information about the proposed generation additions, including cost estimates, an estimated timeline to complete construction, land and water requirements and major federal and state permits and approvals needed.

Eric Egge, Director of Transmission Planning

Mr. Egge's testimony will describe the impact of the proposed generation additions to the Cheyenne Light and Western Area Power Administration transmission systems in the

1 Cheyenne, Wyoming area and the infrastructure that will be necessary to interconnect the
2 proposed generation.
3 **Brian Iverson, Vice President, Treasurer**
4 Mr. Iverson's testimony summarizes the ability of Cheyenne Light and Black Hills Power
5 to finance the proposed generation project and the financial condition of each company.

1 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

2 A. Yes, it does.