IN THE MATTER OF THE VERIFIED PETITION OF PUBLIC SERVICE COMPANY OF COLORADO FOR A DECLARATORY ORDER THAT AN APPLICATION FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY IS NOT REQUIRED TO EXPAND THE MISSISLE SITE SUBSTATION, OR IN THE ALTERNATIVE, APPLICATION FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR THE EXPANSION OF THE MISSILE SITE SUBSTATION

DOCKET NO: 10D-240E

DIRECT TESTIMONY AND EXHIBITS
OF

Gerald M. Stellern

April 16, 2010

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

IN THE MATTER OF THE VERIFIED PETITION	**)**
OF PUBLIC SERVICE COMPANY OF	**)**
COLORADO FOR DECLARATORY ORDER	**)**
THAT AN APPLICATION FOR A CERTIFICATE	**)**
OF PUBLIC CONVENIENCE AND NECESSITY IS	**)**
NOT REQUIRED TO EXPAND THE MISSILE	**)**
SITE SUBSTATION , OR IN THE ALTERNATIVE,	**)**
APPLICATION FOR A CERTIFICATE OF PUBLIC	**)**
CONVENIENCE AND NECESSITY TO EXPAND	**)**
THE MISSILE SITE SUBSTATION	**)**

DIRECT TESTIMONY AND EXHIBITS OF GERALD M. STELLERN

I. INTRODUCTION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Gerald M. Stellern. My business address is 550 15th Street, Denver, Colorado 80202.

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

A. I am employed by Public Service Company of Colorado ("Public Service" or "Company"). My title is Manager of Transmission Asset Management.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS DOCKET?

A. I am testifying on behalf of Public Service.

Q. HAVE YOU PREPARED A STATEMENT OF YOUR EXPERIENCE AND QUALIFICATIONS?

A. Yes. That statement is included as Attachment A to my testimony.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to explain why the Missile Site Substation needs to be expanded to include 345 kV station equipment and 345/230 kV autotransformers, and to generally describe the expansion.

Q. HOW DID THE COMPANY'S PLANS TO CONSTRUCT SUBSTATION FACILITIES AT MISSILE SITE FIRST DEVELOP?

A. As early as 2008, Public Service proposed constructing a 230 kV Substation at Missile Site in its Rule 3206 Report to the Commission. Public Service explained that the Missile Site Substation would be located 40 miles east of Denver, and would sectionalize the existing Pawnee – Daniels Park 230 kV Transmission Line. Public Service explained that the Missile Site Substation had been identified as being required for two potential wind generation interconnection facilities, one of which has been publicly announced as the Cedar Point 252 MW Wind Project owned by Renewable Energy Systems Americas, as well as a 230-115 kV interconnection service point with Intermountain Rural Electric Association ("IREA"), Public Service's largest wholesale customer.

Q. WHAT IS THE STATUS OF THE WIND GENERATION PROJECTS?

A. Public Service is currently evaluating the two wind projects through the Federal Energy Regulatory Commission's (FERC") Large Generator Interconnection Process ("LGIP"). There are two wind developers (GI-2007-

13 and GI-2008-3 that are in the final facility study stage of the LGIP process[1]. GI 2007-13 has executed a Purchase Power Agreement with Public Service known as the 252 MW Cedar Point Wind Project.

Q. AT THE TIME THE 230 KV SUBSTATION AT MISSILE SITE WAS PROPOSED, WERE THERE ANY PLANS TO EXPAND THE FACILITY TO 345 KV?

A. Yes, in the same 2008 Rule 3206 Report, Public Service stated that the 230 kV substation would also likely become an interconnection point for future 345 kV transmission to the eastern, southern, and northern regions of Colorado. Consistent with these plans, the Colorado Coordinated Planning Group ("CCPG") developed long range transmission plans for the State of Colorado that show Missile Site as a termination point for high-voltage transmission originating at or near Lamar, Colorado[2].

Q. DID THE COMMISSION REQUIRE PUBLIC SERVICE TO OBTAIN A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY ("CPCN") TO CONSTRUCT THE 230 KV SUBSTATION AT MISSILE SITE?

A. No. In a July 2, 2008 Order, the Commission ruled that no CPCN would be necessary for the construction of a 230 kV Substation at Missile Site. See Decision No. C08-0676, p. 5 (July 2, 2008).

[1] There are three phases to the FERC LGIP Study process, the Feasibility, System Impact, and Facility Study phases.

[2] In January 2009, the Colorado Long Range Transmission Planning Group ("CLRTPG") released the "2008-2018 Transmission Planning Study." CLRTPG is a subcommittee of CCPG, and was formed to allow load service entities to jointly explore and evaluate the potential for the development of a coordinated transmission network in the State of Colorado. A copy of the study is available at http://www.westconnect.com/filestorage/CLRTPG%202018%20Study%20Report.pdf

Q. WHERE DOES THE CONSTRUCTION STAND WITH RESPECT TO THE 230 KV SUBSTATION AT MISSILE SITE?

A. On December 1, of 2009, Public Service secured an 80-acre site[3] for the construction of the 230 kV Substation at Missile Site. Public Service plans to complete construction by the end of this year (2010).

Q. WHAT EVENT PROMPTED THE COMPANY'S NEED TO EXPAND THE 230 KV SUBSTATION AT MISSILE SITE FROM 230 KV TO INCLUDE 345 KV STATION EQUIPMENT AND 345/230 KV AUTOTRANSFORMERS?

A. In Decision No. C09-0048 dated February 26, 2009, the Commission granted Public Service a CPCN for the Pawnee to Smoky Hill 345 kV Transmission Project. The Commission's approval of a CPCN for the Pawnee-Smoky Hill 345 kV Transmission Line made it necessary to move forward with expanding the Missile Site Substation to include 345 kV station equipment and 345/230 kV autotransformers to enable the new 345 kV Pawnee-Smoky Hill line to be interconnected at the Missile Site Substation.

Q. WHY IS IT NECESSARY TO EXPAND THE 230 KV MISSILE SITE SUBSTATION TO INCLUDE THE 345 KV STATION EQUIPMENT AND 345/230 KV AUTOTRANSFORMERS?

[3] The Rule 3206 Report filed in Case No. 6396 on April 30, 2008 originally estimated that a 35-40 acre site would be needed to accommodate the Missile Site 230 kV Substation facility. Public Service decided to acquire an 80-acre site. The main reason for this was because the price per acre for the property in the area was fairly low, and the additional acreage would allow for more flexibility on the site for placement and configuration of the substation equipment, future transmission line configurations, and on-site drainage requirements. The landowner was a willing seller and this 80-acre site meets all of the needs for the full build out of the Missile Site Substation.

A. The planned 230 kV Missile Site Substation will bisect the Pawnee – Smoky Hill 345 kV Transmission Project. Adding 345 kV station equipment and 345/230 kV autotransformers will allow additional generator and transmission interconnections at the 345 kV voltage level and will allow additional generation from Energy Resource Zones 2 and 3. In addition to connecting the Pawnee/Smoky Hill 345 kV line, the expanded substation will also allow for future 345 kV transmission connections. These may include connections to a Pawnee – Daniels Park 345 kV Project and connections to high voltage transmission from the south, such as to Big Sandy (Limon) and Lamar.

Q. WHAT WILL BE THE APPROXIMATE COST TO EXPAND THE MISSILE SITE SUBSTATION?

A. The estimated cost of the project is $14 million. The expansion is expected to be financed through Public Service's 2010 - 2014 approved capital budget.

Q. WILL PUBLIC SERVICE BE REQUIRED TO ACQUIRE ADDITIONAL PROPERTY TO CONSTRUCT THE EXPANSION?

A. No. The expansion can be constructed on the 80 acres Public Service acquired for the planned 230 kV Substation at Missile Site.

Q. WHAT IS THE PROPOSED SCHEDULE FOR THE EXPANSION?

A. The expansion will commence as soon as the Commission finds that the expansion is necessary in the ordinary course of Public Service's business or grants Public Service a CPCN for the project. The estimated date of completion is May of 2013.

Q. DOES THE COMPANY HAVE MAPS SHOWING THE LOCATION WHERE THE FACILITIES WILL BE CONSTRUCTED, POPULATION CENTERS, MAJOR HIGHWAYS AND COUNTY AND STATE BOUNDARIES AND ELECTRIC ONE-LINE DIAGRAMS OF THE UPGRADE?

A. Yes, these materials are attached to my testimony as Exhibit Nos. GMS-1 through GMS-3.

Q. WERE ANY ALTERNATIVES STUDIED?

A. No. Public Service does not believe that any reasonable alternative to the expansion of the planned 230 kV substation exists. The Missile Site Substation intersects the Pawnee-Smoky Hill Transmission Line. There are no other facilities in close proximity to this area that would enable the interconnection of new generation interconnection requests or new transmission from the south without constructing duplicative facilities. As a result, no reasonable alternatives to the substation expansion were or should be developed or evaluated.

Q. WHAT STEPS WERE TAKEN CONCERNING PRUDENT AVOIDANCE OF ELECTRO-MAGNETIC FIELDS ("EMF") AND MITIGATION OF AUDIBLE NOISE?

A. The prudent avoidance measure possible on this project is the application of reverse phasing. The individual phases will typically have currents flow into the substation tap in one direction, and out of the substation tap in the opposite direction. This configuration provides the desired reverse phasing and reduction in EMF. The EMF levels that will result from the addition of the

345 kV station equipment will not exceed the 22.71 milli-Gauss level that was approved by the Commission for Section 1 of the proposed Pawnee-Smoky Hill 345 kV Transmission Project in Decision Nos. C08-0444 and C09-0048 in Docket No. 07A-421E. Audible noise issues are being addressed through the application of modeling techniques in the "Enviro" modeling program, and through the use of different design techniques. Audible noise issues are also being addressed through the proper handling of conductor and hardware to avoid abrasions or damage that may cause corona noise. Transmission Engineering has designed the project to limit the noise from the transmission line to 50 d(B)A or less.

Q. WILL THERE BE ANY TRANSMISSION LINES CONSTRUCTED FOR THE MISSILE SITE 345 KV SUBSTATION?

A. The Pawnee/Smoky Hill 345 kV Transmission Line will be tapped into and out of the Substation. These tapped lines will be two spans in and out of the Substation. The total will be less than ½ mile in length.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

Attachment A

Statement of Qualifications

Gerald M. Stellern

I graduated from the University of Missouri-Rolla in December of 1973. I started my career at Public Service Company of Colorado in 1974. My career started in the Electric Planning and Analysis group where I worked for approximately 15 years working as a Transmission Planning Engineer, and later as the Supervisor of Loads and Resources Planning. My job function was primarily to produce a customer demand load forecast and to acquire adequate resources to meet that customer demand. I received my Professional Engineer's license from the State of Colorado in 1978.

In 1990 my career directed me to Operations and the Operations Control Center. I worked as Senior Operations Engineer, Manager of the Transmission and Substation desk, Operations Manager, and Manager of the Real Time Engineering group. In this capacity, I performed all functions related to managing and operating the Transmission assets of Public Service and the interconnected Transmission system.

In 2005, I became the Manager of Transmission Reliability Assessment for Public Service, in which I have responsibility for the capital transmission budget as well as planning the Transmission system of Public Service to meet the growing needs of our customers to ensure reliability for the customers. I am also responsible for responding to customer requests for generation, transmission and load interconnections by performing technical studies and to determine any Network

upgrades required to accommodate the request. In 2006 and 2007 the Planning function has completed approximately 30 generation interconnection study reports, several transmission study reports and a multitude of load interconnection reports.

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	)

STATE OF COLORADO	)
	) ss.
CITY AND COUNTY OF DENVER	)

AFFIDAVIT

I, Gerald M. Stellern, being first duly sworn, depose and state that I am the witness identified in the foregoing prepared testimony, that the testimony and exhibits were prepared by me or under my supervision and direction, that I have read the testimony, and that the facts set forth in the testimony and exhibits are true.

Gerald M. Stellern
Manager, Transmission Asset Management

Subscribed and sworn to before me this 15th day of April 2010.

Anne L. MacRae
Notary Public

My Commission expires _____.

ANNE L. MACRAE
NOTARY PUBLIC
STATE OF COLORADO
My Commission Expires 03/13/2011