

**EXHIBIT NO. ___(DB-1T)
DOCKET NO. PG-041624
WITNESS: DENNIS BURKE**

**BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,**

Complainant,

v.

PUGET SOUND ENERGY, INC.,

Respondent.

Docket No. PG-041624

**PREFILED DIRECT TESTIMONY OF
DENNIS BURKE
ON BEHALF OF PUGET SOUND ENERGY, INC.**

AUGUST 15, 2005

PUGET SOUND ENERGY, INC.

PREFILED DIRECT TESTIMONY OF DENNIS BURKE

CONTENTS

I. INTRODUCTION1

II. SCOPE OF TESTIMONY3

III. SUMMARY OF TESTIMONY3

IV. PRIMARY DOCUMENTS REVIEWED AND RELIED ON FOR
TESTIMONY4

V. RECTIFIER INDUSTRY STANDARDS4

VI. THE CROSS-WIRING OF THE RECTIFIER.....6

VII. EXTRAORDINARY LEAK SURVEYS OF SPIRITRIDGE.....9

EXHIBIT LIST

- Exhibit No. _____ (DB-2) Curriculum Vitae of N. Dennis Burke, PE
- Exhibit No. _____ (DB-3) Photograph of Vasa Park Rectifier
- Exhibit No. _____ (DB-4) WUTC Staff's Response to PSE Data Request No. 17 and selected letters provided by the WUTC Staff to various gas distribution system operators

1

I. INTRODUCTION

2 **Q. Please state your name and business address**

3 A. N. Dennis Burke. My business address is 145 N. E. 95th Street Seattle, WA
4 98115.

5 **Q. By whom are you employed?**

6 A. I am the President of N.D. Burke & Associates, Inc. ("N.D. Burke"). My
7 company employs me as a professional engineer.

8 **Q. What are your duties with N.D. Burke?**

9 A. N.D. Burke provides corrosion control consulting services. We advise our clients
10 on the methods and procedures to properly control corrosion on buried pipelines.
11 Our clients typically are in the oil, gas, water or rapid transit business. My duties
12 at N.D. Burke include providing consulting services on a variety of corrosion
13 engineering related issues.

14 **Q. What is your educational background?**

15 A. I have a BS in Chemical Engineering from the University of Pennsylvania and a
16 Masters of Business Administration from the University of Pittsburgh. I am
17 certified as a professional engineer in Washington, Pennsylvania, and Maryland,
18 and am a certified corrosion engineer with the National Association of Corrosion
19 Engineers ("NACE"). My NACE certification number is 1377.

20 **Q. Please summarize your professional experience.**

21 A. I have worked in the corrosion control field on a continuing basis since 1967. I
22 am experienced in all phases of corrosion control of reburied and submerged

1 structures, with a particular emphasis on metallic structures. Among the facilities
2 for which I have experience are natural gas distribution systems.

3 Representative projects I have worked on include the Columbia Gas System,
4 Pittsburgh Group Companies from 1967-73. There, I was the Staff Corrosion
5 Engineer responsible for development of operating standards and procedures,
6 training of corrosion control personnel and project engineering of cathodic
7 protection systems for natural gas transmission, distribution and storage facilities.
8 A major factor of the work assignment involved extensive stray current studies.

9 Another example is my work for the Alyeska Pipe Line Service Company from
10 1994-95. There, I was Project Manager for the design of cathodic protection
11 upgrades for portions of the Trans Alaska Pipeline. That project involved
12 consideration of alternate cathodic protection sources and construction practices
13 in remote locations.

14 In 1996, I worked for the U.S. Army Corp of Engineers as Project Manager and
15 Engineer for the evaluation of cathodic protection systems at the Mikelson Safety
16 Center in North Dakota. That project involved determining the cathodic
17 protection status of the natural gas piping on the facility, compliance with federal
18 pipeline safety regulations, and recommendations for upgrade to current
19 standards.

20 Since August 8, 1996, I have worked as an expert consultant for N.D. Burke &
21 Associates, Inc. on corrosion and cathodic protection issues. Additional details
22 on my qualifications are listed on my curriculum vitae, which is attached as
23 Exhibit No. ____ (DB-2) to my testimony.

1

II. SCOPE OF TESTIMONY

2 **Q. What have you been asked by Puget Sound Energy, Inc. ("PSE") to do in**
3 **this case?**

4 A. I have been asked to provide: (1) expert opinions on gas pipeline industry
5 standards and practices; (2) an expert opinion on whether PSE's repair of the
6 cross-wired Vasa Park Rectifier (the "Rectifier") was within the time period
7 allowed by the WUTC to be deemed in compliance with 49 C.F.R. § 192.463(a);
8 (3) an expert opinion on whether RCW 80.28.210 was violated by virtue of the
9 cross-wired Rectifier; and (4) an expert opinion on whether the WUTC Staff's
10 recommendations of extraordinary leak surveys in the Spiritridge neighborhood
11 are necessary for the public's safety.

12

III. SUMMARY OF TESTIMONY

13 **Q. Please summarize your testimony.**

14 A. The Rectifier appears to be an industry standard device that meets the cathodic
15 protection levels required by federal and state regulations. It was secured from
16 public access in a manner that is consistent with industry practice in Washington
17 and other parts of the country. Since the cross-wiring of the Rectifier was
18 repaired within 90 days of discovery, PSE did not violate the applicable
19 Washington Administrative Code ("WAC") or Code of Federal Regulations
20 ("C.F.R.") governing cathodic protection. PSE also could not have violated RCW
21 80.28.210 because it was in compliance with federal and state cathodic protection
22 requirements once it repaired the Rectifier within the 90 day time period after
23 discovery. Finally, an annual leak survey in the Spiritridge neighborhood is not
24 necessary because the steel mains and gas service lines previously connected to
25 the cross-wired Rectifier were recently replaced with plastic and because the

1 applicable federal and state regulations are sufficient to protect the public's safety.

2 **IV. PRIMARY DOCUMENTS REVIEWED AND**
3 **RELIED ON FOR TESTIMONY**

4 **Q. Please describe the primary documents you reviewed in the course of your**
5 **investigation and that you relied upon for your opinions.**

- 6 A. • Direct Testimony of Graham E. C. Bell and attached Exhibits
7 • Direct Testimony of Kuang-Shi Chu and attached Exhibits
8 • Direct Testimony of Alan E. Rathbun and attached Exhibits
9 • WUTC Staff Response to PSE Data Request No. 17
10 • 49 C.F.R. § 192.463(a)
11 • WAC 480-93-110
12 • NACE Standard TM0497-97 Stoddard Test Method, Measurement
13 Techniques Related to Criteria for Cathodic protection on Underground or
14 Submerged Metallic Piping Systems

15 **V. RECTIFIER INDUSTRY STANDARDS**

16 **Q. During the course of your experience with pipeline safety, how many**
17 **rectifiers, nationwide, have you had occasion to inspect?**

18 A. My best estimate is over 500 in various states across the country.

19 **Q. Are you familiar with the types of Rectifiers that are commonly used within**
20 **the gas distribution industry and the amount of cathodic protection they are**
21 **capable of providing?**

22 A. Yes.

1 **Q. Are you familiar with the Vasa Park Rectifier in Bellevue, Washington?**

2 A. Yes.

3 **Q. Please tell us how you are familiar with the Rectifier.**

4 A. I reviewed photographs of it, which are attached as Exhibit No. ____ (DB-3) to my
5 testimony, I reviewed the various descriptions of the Rectifier within the WUTC
6 Staff prefiled testimony, and I discussed the functioning of the Rectifier with PSE
7 gas operations personnel.

8 **Q. Does the Rectifier comport with industry standards?**

9 A. Yes. The Rectifier is a common make and model and is standard within the gas
10 industry. With the exception of the period of cross-wiring, the Rectifier appears
11 to have functioned normally and provided the appropriate level of cathodic
12 protection for the Spiritridge neighborhood in the manner that it was designed to.

13 **Q. Was the Rectifier adequately protected from unauthorized public access?**

14 A. Yes. The method used by PSE to secure and protect the Rectifier was standard
15 for the industry. Locks on rectifiers are generally meant as safety devices for the
16 public and are not intended to stop someone from intentionally breaking in.

17 **Q. Is it common for rectifiers to become cross-wired?**

18 A. No. In my 38 years of experience, I have only seen it happen four times in the
19 entire country, including this occasion.

1 **VI. THE CROSS-WIRING OF THE RECTIFIER**

2 **Q. Are you familiar with the regulations in Washington that govern cathodic**
3 **protection of wrapped steel pipeline?**

4 A. Yes. I am familiar with the applicable provisions of both the C.F.R. and WAC
5 which govern pipeline safety, and, in particular, cathodic protection of wrapped
6 steel pipe.

7 **Q. Does the C.F.R. or WAC set standards for cathodic protection of wrapped-**
8 **steel pipe?**

9 A. Yes. WAC 480-93-010 incorporates 49 C.F.R. § 192.463(a), which sets the
10 standards for cathodic protection of wrapped-steel pipe.

11 **Q. Other than for the period of time that the Rectifier was cross-wired, are you**
12 **aware of any evidence that would indicate that the Rectifier was not meeting**
13 **the federal or state standards for cathodic protection of the Spiritridge**
14 **neighborhood?**

15 A. No.

16 **Q. Does the C.F.R. or WAC provide for remedial procedures when a rectifier is**
17 **failing to provide the appropriate level of cathodic protection?**

18 A. Yes. The C.F.R. states that when a cathodic protection system fails to meet the
19 federal standard, the problem should be "promptly" addressed. WAC 480-93-110
20 requires that known cathodic protection deficiencies be fixed within 90 days of
21 discovery.

1 **Q. Was PSE's correction of the cross-wiring of the Rectifier within the statutory**
2 **time period allowed by law?**

3 A. Yes. Correcting the cross-wired Rectifier by September 3 complied with the 90-
4 day repair period established by WAC 480-93-110.

5 **Q. Standing alone, was the cross-wiring of the Rectifier a violation of the C.F.R.**
6 **or WAC governing cathodic protection of wrapped-steel pipe?**

7 A. No.

8 **Q. Why not?**

9 A. The codes governing both the standard for cathodic protection and the time period
10 for correcting known cathodic protection deficiencies are meant to be read in
11 conjunction with each other. The gas industry and those who regulate it
12 anticipate and accept that cathodic protection systems occasionally fail and that
13 repairs are going to be required. The codes recognize that there will not be 100%
14 cathodic protection on 100% of the pipes 100% of the time. Such a standard is
15 impossible to meet and would be unnecessary for gas pipeline safety. Rather, the
16 federal and state codes establish a time period under which deficiencies with
17 cathodic protection systems must be corrected. By correcting the cross-wiring
18 within the statutorily allowed period, PSE complied with the applicable
19 provisions of the C.F.R. and WAC governing cathodic protection of wrapped-
20 steel pipeline.

21 **Q. Are you aware of any industry practice requiring a response sooner than 90**
22 **days after a substandard level of cathodic protection is discovered?**

23 A. No. There is no industry practice on how long it should take a gas distribution
24 system provider to respond to a zero read, as was the case here, or to any other

1 level of cathodic protection below that which is required by the C.F.R. The only
2 specific time constraints are those imposed by the WAC.

3 **Q. In the state of Washington, do you know how the WUTC Staff has**
4 **historically evaluated a situation where a cathodic protection system has**
5 **dropped below the level of voltage that is required by the C.F.R.?**

6 A. Yes. In my personal experience, I have seen the WUTC Staff routinely interpret
7 the C.F.R. and the WAC to allow a gas distribution system operator 90 days
8 within which to make a repair to any deficiencies in a cathodic protection system.
9 In addition, while reviewing the WUTC Staff's responses to PSE's Data Request
10 No. 17, I observed a number of letters to various gas distribution system operators
11 indicating that, if an operator corrects a deficiency in its cathodic protection
12 system within 90 days, then that operator would be deemed to be in compliance
13 with C.F.R. § 192.463(a) and WAC 480-93-110.

14 **Q. Can you provide us with examples of such letters from the WUTC Staff to**
15 **Washington gas distribution system operators?**

16 A. Yes. Attached to my testimony, as Exhibit No. ____ (DB-4), is the WUTC Staff's
17 Response to PSE Data Request No. 17 and selected letters provided by the
18 WUTC Staff to Prodicta Chemical Company ("PCC"), the City of Buckley, and
19 PSE. In all of these letters, the WUTC Staff has specifically identified what it
20 calls "an example of compliance" in the context of cathodic protection
21 deficiencies. In a letter to PCC, for example, the WUTC provides the following
22 statement:

1 **An Example of Compliance**

2 If cathodic protection deficiencies are found, remedial action must
3 be completed within 90 days. Provide the Commission with
4 evidence of compliance.

5 Similar statements can be found in the other letters. Indeed, they all reinforce the
6 fact that even the WUTC Staff has historically looked at deficiencies in cathodic
7 protection as only the starting point of the analysis of whether a violation has
8 occurred. If a gas distribution system operator corrects a deficiency and makes
9 that correction known to the WUTC Staff within 90 days of discovery, that is
10 deemed to be in compliance with the federal and state cathodic protection
11 requirements. That is exactly what PSE did in this case.

12 **Q. In the WUTC Staff's prefiled testimony, they conclude that, as a result of the**
13 **cross-wired Rectifier, PSE violated RCW 80.28.210. Do you agree with that**
14 **conclusion?**

15 A. No.

16 **Q. Why not?**

17 A. PSE met all of the C.F.R. and WAC requirements regarding the Rectifier and
18 corrected the substandard level of cathodic protection within the allowed time
19 period. Since PSE was and is following the requirements of the federal and state
20 codes governing cathodic protection, it is not possible to conclude that RCW
21 80.28.210 was violated by PSE.

22 **VII. EXTRAORDINARY LEAK SURVEYS OF SPIRITRIDGE**

23 **Q. Have you reviewed the Order Requiring Emergency Action; Notice of**
24 **Prehearing Conference dated September 17, 2004 (the "Emergency**

1 **Order")?**

2 A. Yes.

3 **Q. Are you aware that the Emergency Order requires PSE to conduct leak**
4 **surveys of the Spiritridge neighborhood every 30 days?**

5 A. Yes.

6 **Q. Is a leak survey every 30 days necessary in the Spiritridge neighborhood?**

7 A. No.

8 **Q. Why not?**

9 A. PSE replaced the pipe system in the Spiritridge neighborhood with plastic pipes.
10 Accordingly, the piping in the entire neighborhood is all new and all plastic,
11 resulting in a pipe system that is one of the safest that can be found. Surveying
12 for leaks every 30 days in a new, plastic pipe system is simply not necessary to
13 protect the public.

14 **Q. In the WUTC Staff's prefiled testimony, they have recommended that PSE**
15 **perform annual leak surveys in the Spiritridge neighborhood. Do you agree**
16 **with that?**

17 A. No. Annual inspections do not make sense for the same reason the 30-day
18 inspections do not make sense. The Spiritridge gas service lines are new plastic
19 pipes that are immune from corrosion. Unless there is third-party excavation
20 damage, there is no reason to expect gas leakage.

1 **Q. What would be an appropriate interval of time within which to conduct a**
2 **leak survey in the Spiritridge neighborhood?**

3 A. The applicable federal and state regulations allow for leak surveys in residential
4 areas with plastic pipes every five years. These regulations apply to all gas
5 distribution system operators in Washington and are adequate to protect public
6 safety. Thus, I believe leak surveys every five years is sufficient for Spiritridge
7 and all other parts of the PSE gas distribution system.

8 **Q. Does this conclude your testimony?**

9 A. It does.