

Exhibit No. SJK-1T
Docket UE-15____
Witness: Stuart J. Kelly

**BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

In the Matter of

PACIFIC POWER & LIGHT
COMPANY,

Petition For a Rate Increase Based on a Modified
Commission Basis Report, Two-Year Rate Plan,
and Decoupling Mechanism.

Docket UE-15____

**PACIFIC POWER & LIGHT COMPANY
DIRECT TESTIMONY OF STUART J. KELLY**

November 2015

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1 **Q. Please state your name, business address, and present position with PacifiCorp.**

2 A. My name is Stuart J. Kelly. My business address is 9951 SE Ankeny, Portland,
3 Oregon 97216. My present position is Vice President, System Operations. I am
4 responsible for the overall safe and reliable operation of PacifiCorp's electric
5 transmission and distribution system, including compliance with relevant North
6 American Electric Reliability Corporation (NERC) standards and implementation of
7 transmission operations and emergency procedures. I am testifying for Pacific Power
8 & Light Company (Pacific Power or Company), a division of PacifiCorp.

9 **QUALIFICATIONS**

10 **Q. Please describe your education and professional experience.**

11 A. I graduated with a Masters degree in Business Administration from the University of
12 Strathclyde and an Honors Degree from the University of Paisley. I have been
13 PacifiCorp's vice president of System Operations since October 2015. Before that, I
14 served as Vice President of major project delivery. Before joining PacifiCorp in
15 September 2001, I worked at Scottish Power for six years in a variety of positions of
16 increasing responsibility in that company's acquisitions, strategy and business
17 planning, energy supply management, commercial, customer service, and metering
18 organizations.

19 **PURPOSE OF TESTIMONY**

20 **Q. What is the purpose of your testimony?**

21 A. The purpose of my testimony is to describe the Company's investment in a new
22 Supervisory Control and Data Acquisition Energy Management System (SCADA
23 EMS). My testimony will demonstrate why these plant additions are reasonable,

1 necessary, and should be included in the Company's revenue requirement for rates
2 effective May 1, 2017.

3 **PURPOSE AND NECESSITY**

4 **Q. Please provide a description of the purpose and necessity of the SCADA EMS**
5 **system.**

6 A. A SCADA EMS is a system of computer-aided tools used by operators of electric
7 utility grids to monitor, control and optimize the performance of the generation and
8 transmission system. The monitor and control functions are known as SCADA, and
9 EMS refers to the optimization packages or "advanced applications" that include a
10 suite of applications such as generation control, trending, alarm management, data
11 management, contingency analysis and state estimation. The SCADA EMS is
12 essential to operations and grid monitoring. Without the SCADA EMS system, the
13 Company would have no visibility into the real-time status of its electric system and
14 no way to operate that system in response to system conditions. The SCADA EMS
15 system is the principal element used to provide safe, reliable power, and maintain
16 compliance with Federal Energy Regulatory Commission (FERC) and NERC
17 reliability standards. The SCADA EMS system also provides Peak Reliability
18 (PeakRC), the Reliability Coordinator (RC) for most of the Western Interconnection,
19 critical system analytical data from the Company.

20 **Q. Please explain why business functions are unmet by the Company's existing**
21 **system.**

22 A. PacifiCorp's existing SCADA EMS is a legacy Ranger® Network Manager
23 (NM2003) system purchased from Ventyx/ABB in 2002 and went live in 2005.

1 PacifiCorp is currently the last customer running this version. The system runs
2 obsolete hardware and software that is no longer capable of meeting current or future
3 business requirements. As new standards are developed, maintaining an unsupported
4 system represents a high non-compliance risk related to recent NERC reliability and
5 Critical Infrastructure Protection Standards (CIPS) requirements. For example:

- 6 • The platform on which the existing SCADA EMS runs is obsolete and, due to
7 lack of vendor support and cost/difficulty of customization, cannot practically
8 be adapted to meet business requirements related to compliance, growth and
9 reliability.
- 10 • The existing SCADA EMS application does not support proper password
11 management. This access management is currently addressed through manual
12 intervention. While this is acceptable to comply with CIPsv3, it will not
13 comply with CIPsv5 which becomes effective April 1, 2016.
- 14 • The underlying hardware infrastructure is no longer supported with routine
15 updates by the vendors (Hewlett Packard and Oracle), replacement parts are
16 not available, and the commercial availability of components is limited to
17 used equipment. Hewlett Packard stopped issuing operating system patches in
18 2010. The last supported update was applied to our environment in 2013.
19 The ABB Ranger system (NMR2003) update was last applied in 2008.

20 **Q. Are there any other risks associated with failing to upgrade the Company's**
21 **existing legacy system?**

22 A. Failing to upgrade the legacy system would expose the business to increased risk of
23 system failure, hinder the addition of new functionality and potentially cause issues
24 that could result in additional NERC violations and penalties.

25 **Q. Has the Company reviewed any alternative solutions?**

26 A. Yes. PacifiCorp could upgrade the existing ABB SCADA EMS Ranger NM2003 to
27 latest (and final) version under the current architecture, NMR5. However, PacifiCorp
28 would be required to replace that version within five years with ABB's next version,
29 called "common release," due to NMR5 obsolescence. PacifiCorp considered, but

1 did not move forward, due to uncertainty about the viability of both the NMR5 and
2 “common release” platforms.

3 While NMR5 is the logical next step for ABB customers running NM2003, it
4 is effectively obsolete. ABB’s focus now is on its “common release” platform. In
5 addition, support for the Hewlett Packard Itanium-based hardware required to sustain
6 NMR5 is dwindling due to lack of market share. Based on the current product
7 roadmaps for ABB and Hewlett Packard, an upgrade to ABB’s “common release”
8 would be required within five years after an upgrade to NMR5. The upgrade from
9 NMR5 to “common release” would require complete hardware and software
10 replacement due to system and architectural changes, essentially making it a
11 replacement project.

12 Although upgrading the system now and moving to ABB’s common release
13 within five years would cause less business process disruptions in the short term, it
14 would result in two business process disruptions of 18-24 months, each, to manage
15 the transition to NMR5 then to “common release”. In addition, it would not eliminate
16 the technology obsolescence issues and would require migration of custom
17 functionality.

18 The projected capital cost to implement this alternative on a total-company
19 basis is \$38.9 million, as opposed to projected costs of \$33.9 million for a new
20 SCADA EMS system with additional automation and functionality.

21 **Q. Please describe the process by which the Company selected the new system.**

22 A. A request for proposals (RFP) was released to five vendors. All five vendors
23 responded to the RFP and participated in on site presentations and demonstrations.

1 The presentations followed a common script with common questions, and were
2 followed up with ad hoc conversations where appropriate. A formal scoring process
3 was followed to rate all vendors relative to both technical criteria and commercial
4 terms. Open Systems International, Inc. was chosen as the winner, and, in
5 conjunction with development of a specific statement of work, a contract was
6 successfully negotiated and agreed between PacifiCorp and Open Systems
7 International, Inc. in May 2013.

8 **Q. Please describe the key benefits of the new system.**

9 A. The key benefits associated with replacement of the existing SCADA EMS include
10 the following:

- 11 • Eliminate operational risks associated with the obsolete Ventyx/ABB SCADA
12 EMS software and hardware, which will enhance system availability and
13 support.
- 14 • Modern SCADA EMS provides standard functionality and is hardware
15 independent, where previous generations of SCADA EMS required extensive
16 customization and purpose built hardware to conform to the specific needs of
17 each individual utility. Further, the previous extensive custom functions of
18 aged systems have been replaced with flexible configurations that are much
19 less resource intensive.
- 20 • Facilitate advancement of system capacity and performance goals to meet
21 business requirements, such as the ability to support improved situational
22 awareness through full system overview displays with increased functionality,
23 process monitoring/notifications, improved contingency analysis and state
24 estimation tools, and improved alarm management applications.
- 25 • Improve the ability to comply with NERC reliability and CIPS requirements
26 by providing industry-standard infrastructure and tools including major
27 application/process monitoring.
- 28 • Improve compliance with CIPS access management requirements by
29 expanding account management through Active Directory integration.

