

ITBM#1

Untitled

From: William Ernest Schenewerk, PhD, CA Professional Nuclear Engineer: NU2272
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To: Los Angeles Energy and Environment Committee, Item 1: 13-0340, 04/17/2013
Subject: Board of Water and Power Commissions Resolution No. 013 255, 03/19/2013.
Replace IPP with 600 Mwe to 1200 MWE CCGT, startup no later than 07/01/2025
To: Kate Linthicum, kate.linthicum@latimes.com, Los Angeles Times
cc: Jack Humperville, lajack@gmail.com Joesph Ramallo, LADWP,
joseph.ramallo@msn.com, Sent: 03/20/2013, 20:10 GMT (PDT + 7 hours)
Subject: "L.A. acts to end coal energy," LA Times, LATEXTRA, AA1 and AA2, 03/20/2012

Ms.(s)/Sir(s):

March 19, 2013 LADWP board action appears ultimately to lead to disaster. LADWP effectively loses roughly 1000 Mwe to 2000 Mwe dispatchable generation out of a projected 2020 6500 Mwe peak demand.

Per LADWP March 19, 2013 handout, IPP (Intermountain Power Project) connection has 2400 Mwe transmission capacity. Handout shows Navajo being 477 Mwe and IPP being 1800 Mwe capacity. LADWP share of IPP is between 875 Mwe and 1200 Mwe. Handout shows Navajo and IPP output (maximum total = 1677 Mwe) being replaced with solar, wind, geothermal + Combined Cycle Natural Gas. IPP, Delta UT, has 1800 Mwe capacity, used by six Southern California customers, presumably delivered over the 2400 Mwe IPP transmission line.

Problem is use of the 2400 Mwe transmission line. Per LADWP 03/19/2013 LADWP handout, IPP powerline already delivers 400 Mwe from Utah to Southern California. 306 Mwe of the 400 Mwe is apparently from Milford wind farm, Beaver and Millary Counties, Utah.

Page 10 LADWP 03/19/2013 handout: IPP is to be replaced with a "small clean natural gas powerplant and free up transmission capacity to develop more renewable energy."

Typical single unit CCGT (combined cycle gas turbine) powerplant will be 500 Mwe. Two CCGT units would be 1000 Mwe. So, the 2400 Mwe IPP powerline would be transmitting the difference in "renewable energy", between 1400 Mwe and 1900 Mwe.

Being as the 1400 to 1900 Mwe renewable energy would be intermittent, some other entity has to supply an additional 1400 Mwe to 1900 Mwe when the wind does not blow and the sun does not shine. Typically right after sunset on a hot day. Otherwise the IPP powerline is not fully used, creating an immediate ~1000 Mwe power deficit.

The 2001 power shortage apparently never exceeded 650 Mwe. Rancho Seco, torn down in 1995 was good for 850 Mwe. I know: "Enron did it."

Normally merchant generators from all over western USA would jump in and supply the needed 2000 Mwe on demand, provided offered sufficient price for the power. Obviously replacement power might be very expensive, but someone would supply it.

But there is now a serious problem:

Philip D. Moeller, Federal Energy Regulatory Commission (FERC), 08/06/2012 letter to California Governor Edmund G. Brown: "Specifically, by failing to clearly define "resource shuffling" but nevertheless prohibiting it, and by requiring energy importers, under penalty of perjury, that they have not engaged in resource shuffling, the ARB is creating uncertainty and great concern among entities that sell into California. Your state continues to depend on importing nearly 25 percent of its electricity and could not maintain reliable and affordable electricity if out-of-state resources choose to avoid regulatory uncertainty by electing not to participate in the California market."

So, when ~2 Gwe worth of wind and solar are unavailable to transmit through IPP powerline, merchant generators may be afraid to step up and supply the power. The IPP powerline would not run at full capacity. Other power transmission lines into Southern California may not be able to transmit an additional 2 GWE on demand. Lights go out multiple times.

In my short speech to the LADWP Board on March 19, 2013, I stated: "...could be very unpleasant." I only knew about the 9:00 board meeting one hour ahead of time, so the above analysis was not done until the next day. Now there is a numerical value to "very unpleasant."

[Signature]
Sincerely, William Ernest Schenewerk, PhD, 04/17/2013
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Date: 4/17/13
Submitted in BB Committee
Council File No: 13-0340
Item No.: 1
Deputy: PUBLIC