DOCKETED

Docket Number:	15-IEPR-12
Project Title:	Nuclear Power Plants
TN #:	204566
Document Title:	Gene Nelson, Ph.D. Comments: Helms Pumped Storage Operates in Conjunction with DCPP to Provide Emissions-Free Power
Description:	N/A
Filer:	System
Organization:	Gene Nelson, Ph.D.
Submitter Role:	Public
Submission Date:	5/11/2015 2:19:11 AM
Docketed Date:	5/11/2015

Comment Received From: Gene Nelson, Ph.D.
Submitted On: 5/11/2015
Docket Number: 15-IEPR-12

Helms Pumped Storage Operates in Conjunction with DCPP to Provide Emissions-Free Power

A one-page profile of PG&E's Helms Pumped Storage Unit from the 01 August 2014 issue of PG&E Currents. During the night, excess power from DCPP is employed to "charge up" Helms pumped storage. During the day, DCPP's twin reactors, in conjunction with Helms Pumped Storage can provide almost the equivalent of the power produced by three reactors to the California power grid without any emissions that contribute to global warming, nor any air pollution.

Additional submitted attachment is included below.

Posted on August 1, 2014 http://www.pgecurrents.com/2014/08/01/helms-at-30-hydroelectric-plant-delivers-safe-clean-affordable-energy/

Helms at 30: Hydroelectric Plant Delivers Safe, Clean Affordable Energy

By Denny Boyles

FRESNO — PG&E marks 30 years of commercial operation at Helms Pumped Storage Project this month. The hydroelectric facility was considered an engineering marvel when it was built and came online in 1984, and continues to play a vital role today as well in California's clean energy future.

This month marks the 30th anniversary of the Helms Pumped Storage Project, which produces enough electricity to power the cities of Fresno and Oakland.

Helms operators can take the plant from an idle state to full generation in eight minutes. That ability to quickly ramp up and down plays a key role in integrating intermittent renewable resources such as wind and solar onto the power grid, said John Conway, PG&E senior vice president for Energy Supply.

"Helms and our Diablo Canyon Power Plant give us the unique capability to fully integrate a significant amount of clean energy into the power supply while still ensuring that we can meet the energy demands of our customers," Conway said. "When it began delivering power 30 years ago, Helms played a key role for California and our customers. That role has only grown as our electric grid has evolved."

Nestled high in the Sierra Nevada Mountains about 50 miles east of Fresno, Helms features two reservoirs and three hydro pump-generators. The generators can produce a total of 1,212 megawatts of electricity or enough to power the cities of Fresno and Oakland. Nearly four miles of 28-foot diameter tunnels connect the powerhouse and two reservoirs.

[See a video tour of Helms.]

During times of high electric demand, water flows downhill from Courtright Lake at the higher elevation (8,200 feet) through the powerhouse. When there is excess generation online, the pumps can be reversed, pushing the water uphill from Lake Wishon at the lower elevation (6,500 feet) to recharge the upper reservoir.

With nearly 4,000 megawatts of generation, PG&E has the largest privately owned hydroelectric system in the nation, stretching from the Southern Cascade Mountain Range south along the Sierra-Nevada Mountains to Bakersfield. PG&E's hydroelectric system produces enough energy to power almost 4 million average homes.

Email Currents at Currents@pge.com.