**Documentation for data files**

**Updated Data Files**

This document provides a quick explanation of the data files found on the this web site. Each Excel file also has an explanation of the data it contains located at the header of the column.

**Hydro Data Dec. 1 2012 – Dec. 27 2015.xlsx** contains multiple data sets. The first two tabs contain project generation measured at the switchyard adjusted for encroachment energy. The second two tabs contain project capacity measured at the switchyard adjusted for encroachment energy. The next three tabs contain minimum generation requirement data. The next two tabs contain project flows, turbine discharge and spilled water. The next two tabs contain inflow data provided by MCHC and the last tab contains encroachment energy. These data sets begin on 12/1/2012. Data for prior dates are contained in the following separate files (note these files are no longer updated):

* RR Hydro Data 1990-2012 (1/29/13)
* RR Encroachment Data 1990-2012
* RI Hydro Data 1990-2012 (1/29/13)
* RI Encroachment Data 1990-2012
* 1990-2012 Hourly Flow Generation Data

**Slice Purchaser Generation Tool** is a daily planning spreadsheet that models the slice product. It allows a user to input variables, i.e. inflows, outages, etc. and observe the flexibility/constraints of the Chelan Power System over the course of a day.

**RR\_Forced\_Outages.xlsx** This files contain the date, time, duration, unit outage, and reason of all unplanned or forced outages lasting over 5 hrs.

**RR\_Planned\_Outages.xlsx** The District plans ongoing maintenance/overhauls/rehabs out for many years into the future as part of the District’s asset management program. These files contain the date, duration, unit outage, and reason for the planned outages.

**RI\_Forced\_Outages.xslx**  This files contain the date, time, duration, unit outage, and reason of all unplanned or forced outages lasting over 5 hrs.

**RI\_Planned\_Outages.xslx**  The District plans ongoing maintenance/overhauls/rehabs out for many years into the future as part of the District’s asset management program. These files contain the date, duration, unit outage, and reason for the planned outages.

**Historical\_Fish\_ Spill.docx** This file lists the historical fish spill levels expressed at a percentage of total project flow for spring and summer fish spill. In addition to spilling for fish, spill can also be affected by total dissolved gas (TDG) levels.  When gases reach a certain level, spill may be reduced to stay within an acceptable band as set by the Washington Department of Ecology.

**FishSpill\_Projections\_2016-2021.docx** This file lists the District’s “best estimate” for spring and summer fish spill and studies at Rocky Reach and Rock Island. The file contains both a written description, and table, showing best estimates for project spill and alternative spill likelihoods if juvenile survival standards are not met.

**District\_Hydro\_Projects\_Capacities.xlsx** Thisprovides various project and unit capacity numbers. There can be many numbers used to describe the capacity or capability of the hydro projects. This documents the various ways to calculate the capacity or capability at the projects.

**Capacity Reductions for Unit Outages.xlsx** This file provides the reduction in plant capacity for each unit out of service for both the Rocky Reach and Rock Island projects**.**

**Canadian Entitlement Allocation (Canadian Treaty)** The Columbia River Treaty (the “Treaty”), a 60-year treaty between the United States and Canada relating to cooperative development of the water resources of the Columbia River basin, was placed in effect on September 16, 1964.  Pursuant to the Treaty, Canada has constructed three water storage facilities in Canada and is entitled, among other things, to receive one-half of the downstream power benefits defined in the Treaty.

In general the Treaty and its implementing agreements provide a means to coordinate the operation of all major power plants and transmission systems in the Northwest for the mutual benefit of the participants and a method to obtain and distribute the increased power benefits resulting from the construction of the Canadian water storage facilities.  These agreements expired in 2003.  The parties to the Pacific Northwest Coordination Agreement have negotiated a replacement agreement which extends the term to 2024.

The return of energy to Canada, via a schedule to BPA is referred to as **CEAEA** which is the abbreviation for Canadian Entitlement Allocation Extended Agreement. The scheduled

The Rocky Reach and Rock Island projects are obligated to return a predetermined amount of energy on heavy load hours under the extended agreement.

**Archive Data files (no longer updated)**

**RR\_Hydro\_Data\_1999-2012.xlsx** and **RI\_Hydro\_Data\_1999-2012.xlsx** files contains multiple data sets.

These files contain multiple data sets. The first sheet contains the project net inflow, available capacity and available generation. The project net inflow is expressed in MWh and is the amount of energy entering the Project Paper Pond. All data has been adjusted for encroachments, but NOT CEAEA energy. Capacity data is reflective of operations, so outages of any kind are reflected.

Historical project minimum capabilities and recent minimum energy requirements during high flows are contained in this file also. See notes on “Project\_Minimum\_Capabilities” and “Min\_Energy\_Requirement” tabs in the excel file for explanation of this data.

Historical month average CEAEA is also found in this file. The Rocky Reach and Rock Island projects are obligated to return a pre determined amount of energy on heavy load hours to BPA under the Columbia River Treaty (see below for explanation).

**RR Average Generation Forecast** and **RI Average Generation Forecast** these spreadsheets provides examples of a method used to calculate “average water” and “average generation”

Capacity Reductions for Unit Outages file contains data that describes the reduction in capacity for each individual unit at both Rocky Reach and Rock Island.

**1990-2012\_Hourly\_Flow\_Gen\_Data.xlsx** provides historical total flow, turbine flow and project generation along with an explanation and example of the hydro generation equation that is used to estimate the amount of generation given flow. Note that the generation is metered at the switchyard and does not account for encroachments or CEA energy.

[**RR\_Hydroregulation.xlsx**](http://www.gcpud.org/powerauction/power09/documents/WAPR/WAPR%20Hydroregulation%2009.xls) **and RI\_Hydroregulation.xlsx** are tables that shows an estimate of project net generation assuming a repeat of natural flows from 1928-1998, assuming current day local and regional non-power constraints.  The data is in average megawatts for the periods shown.  Notice that August and April are split into two half-months.

**RR\_Encroachment\_Data\_1999-2012.xlsx** and **RI\_Encroachment\_Data\_1999-2012xlsx** These files contain historical encroachment data for the time period 1999-2010. The Rocky Reach project receives encroachment energy from the downstream Rock Island project and delivers encroachment energy to the upstream Lake Chelan project. The net effect is a net gain in energy to Rocky Reach. The Rock Island project receives encroachment energy from the downstream Wanapum project and delivers encroachment energy to the upstream Rocky Reach project. The net effect is a net gain in energy to Rock Island.