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September 7, 2016

### **MEMORANDUM**

**TO: Power Committee**

**FROM: Ben Kujala**

**SUBJECT: GENESYS Redevelopment Update**

### **BACKGROUND:**

**Presenter:** Ben Kujala

**Summary** Staff are currently finalizing the functional requirements for the redevelopment of GENESYS. Having a comprehensive understanding of what we would like to have included when the model is redeveloped, staff is now moving on to exploring options for proceeding with updating the GENESYS model.

**Relevance** GENESYS is used to assess adequacy for the power plan and annual adequacy assessment.

**Workplan:** A.5.1 Complete Redevelopment of GENESYS

**Background:** The redevelopment of GENESYS is covered in items ANLYS-22 and ANLYS-23 in the action plan of the Seventh Plan. The Council worked this fiscal year with contractors to develop functional requirements for the redevelopment effort.

**More Info:** N/A

# GENESYS Redevelopment Update



## Redevelopment thus far:

- Documented the existing use and function of GENESYS
- Proposed expanded functionality and reviewed with public
- Developed requirements for redevelopment based on proposal and feedback
- Reviewed detailed requirements with public
- Developed final requirements for redevelopment



The key improvements we have proposed:

- **Time-dependent nature of the hourly hydro capability** – model cascading of multiple dams as part of the system dispatch
- **Interaction between assignment of reserves and system capacity** – incorporate reserves into an optimized dispatch
- **Trade-off between decisions for economics and adequacy** – improved market representation
- **Representation of limitations on operators in dispatching the system** – add fuel accounting and forecast error

How to proceed with redevelopment:

- RFP – main challenge is in getting sufficient response, likely results in additional software licensing
- In-house – requires finding contractors for redevelopment and managing project
- National labs – requires a lab interested in working with us and could expand timeline
- Other?

- GENESYS should continue to be a collaborative effort between Bonneville and the Council
- Methodology and results will be transparent and understandable
- GENESYS will ideally continue to serve adequacy assessment needs in other regional organizations