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12/6/2016

### MEMORANDUM

**TO: Power Committee**

**FROM: John Ollis, John Fazio and Ben Kujala**

**SUBJECT: GENESYS Redevelopment Update**

### **BACKGROUND:**

**Presenter:** John Ollis, John Fazio and Ben Kujala

**Summary:** Staff has finalized the functional requirements for the redevelopment of the GENESYS model and has spent the last few months researching the viability of redevelopment options. After exploratory conversations with potential vendors, a national lab, university researchers and independent contractors, staff recommends moving forward with a Request for Proposal (RFP) for the GENESYS Redevelopment Project.

**Relevance:** GENESYS is used to annually assess the adequacy of the regional power supply. It also calculates the adequacy reserve margins used in the Regional Portfolio Model to develop the Council's power plan.

**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 Power Plan. This past fiscal year, Council staff worked with contractors to develop the functional requirements for the redevelopment effort.

**More Info:** GENESYS background:  
<http://www.nwcouncil.org/energy/saac/GENESYS>

# GENESYS Redevelopment Project Update and RFP

Council Meeting  
12/13/2016



## Action Plan Implementation

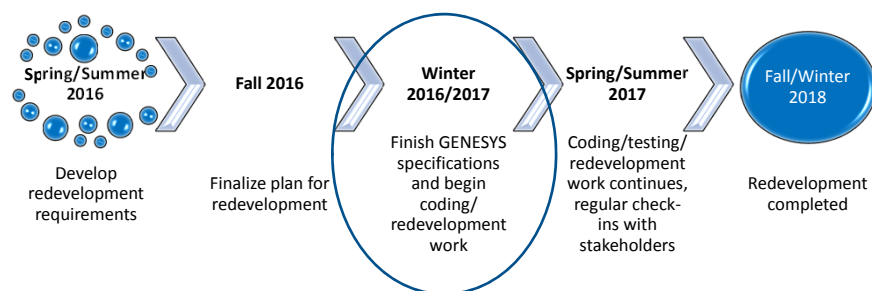
- The redevelopment of the GENESYS model is a key item of the Action Plan in the Seventh Power Plan and part of the current work plan.
- The redevelopment is a broad effort involving the Council, the Bonneville Power Administration, regional utilities and other interested parties.



## Review: Why Redevelop GENESYS?

- Time-dependent nature of the hourly hydro capability
  - Better reflect cascading nature of multiple dam system
- Interaction between assignment of reserves and system capacity
  - Coordinate scheduling of energy and reserve obligations
- Trade-off between decisions for economics and adequacy
  - Improved and more general market representation
- Representation of limitations on operators in dispatching the system
  - Add fuel accounting and forecast error
- Maintain current functionality and accessibility

## Initial High Level Project Timeline



## Exploration of Redevelopment Options

### **Council staff explored three main paths:**

1. Self-development with contractor help
2. Collaborate with labs or university
3. Contract with a vendor through RFP (preferred)

## Preferred Approach

**After talking to multiple vendors and exploring other options, staff believes**

- There are two or more well-positioned vendors to bid on the RFP
- Existing work may complement or extend potential capabilities of the redeveloped model
- Issuing an RFP leaves flexibility to pursue other options if the response is not satisfactory

## Approval for RFP

- Council staff requests approval to put out a request for proposal for GENESYS Redevelopment
  - Budget range: \$300-\$450K
  - Project completion: End of FY18
- If no qualified candidates emerge, staff will revisit the first two options; 1) self-development or 2) collaboration.