



CADSWES University of Colorado

Center for Advanced Decision Support for Water and Environmental Systems

Engineering Algorithms

RiverWare User Group Meeting
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David Neumann

Outline

- Unit Power method and the U Flag
- New methods added on the
 - Reservoirs
 - Reach
 - Groundwater Storage

U Flag and Unit Power

➤ Unit Power Method – Specify either:

- Unit Turbine Release
- Unit Energy
- Solve for the other

plant	Unit 1	Unit 2	Unit 3
250	100	150	0

- Cannot set plant level values and solve for unit values

➤ U Flag

- Set on Power reservoir slots:

- Energy
- Turbine Release

plant	Unit 1	Unit 2	Unit 3
250 U	100	150	0

- Considered an input so it dispatches the reservoir:
 - solveMB_givenEnergyInflow ...
 - solveMB_givenInflowRelease
- Checks for data and sums unit values

New methods added

➤ Reservoirs

Category	Method / change	What it does
Spill Calculation	Spill Capacity Fraction slot	Specify fraction of spillway that is available
Regulated Spill Overflow	Closed Gate Overflow	Specify unregulated spill over closed spill works
Evaporation	Periodic Net Evaporation	Compute evaporation and subtract out portion that would have occurred if reservoir were not there
Seepage	Single Value Seepage	Specify a scalar seepage

New methods added (cont.)

➤ Reach

Category	Method	What it does
Stage	Inflow Stage Table Lookup	Compute the stage solely as a function of Inflow
Seepage Routing	One Timestep Seepage Lag	Lag the seepage by one timestep
Evaporation	Pan Evaporation	Compute evaporation based on pan coefficients and the surface area

➤ Groundwater Storage

Category	Method	What it does
Evaporation	Wetted Sand Evaporation	Compute evaporation from the shallow groundwater, possibly as a function of flow in the connected reach

Questions?
Comment?
Suggestions?