

RMC-RFA Calibration of Reservoir Model

DLS-114, Module 2.18



U.S. ARMY



**US Army Corps
of Engineers®**

Dam and Levee
Safety Programs

March 2026 / Version 1

ALLATOONA DAM, GA (SOURCE: USACE)

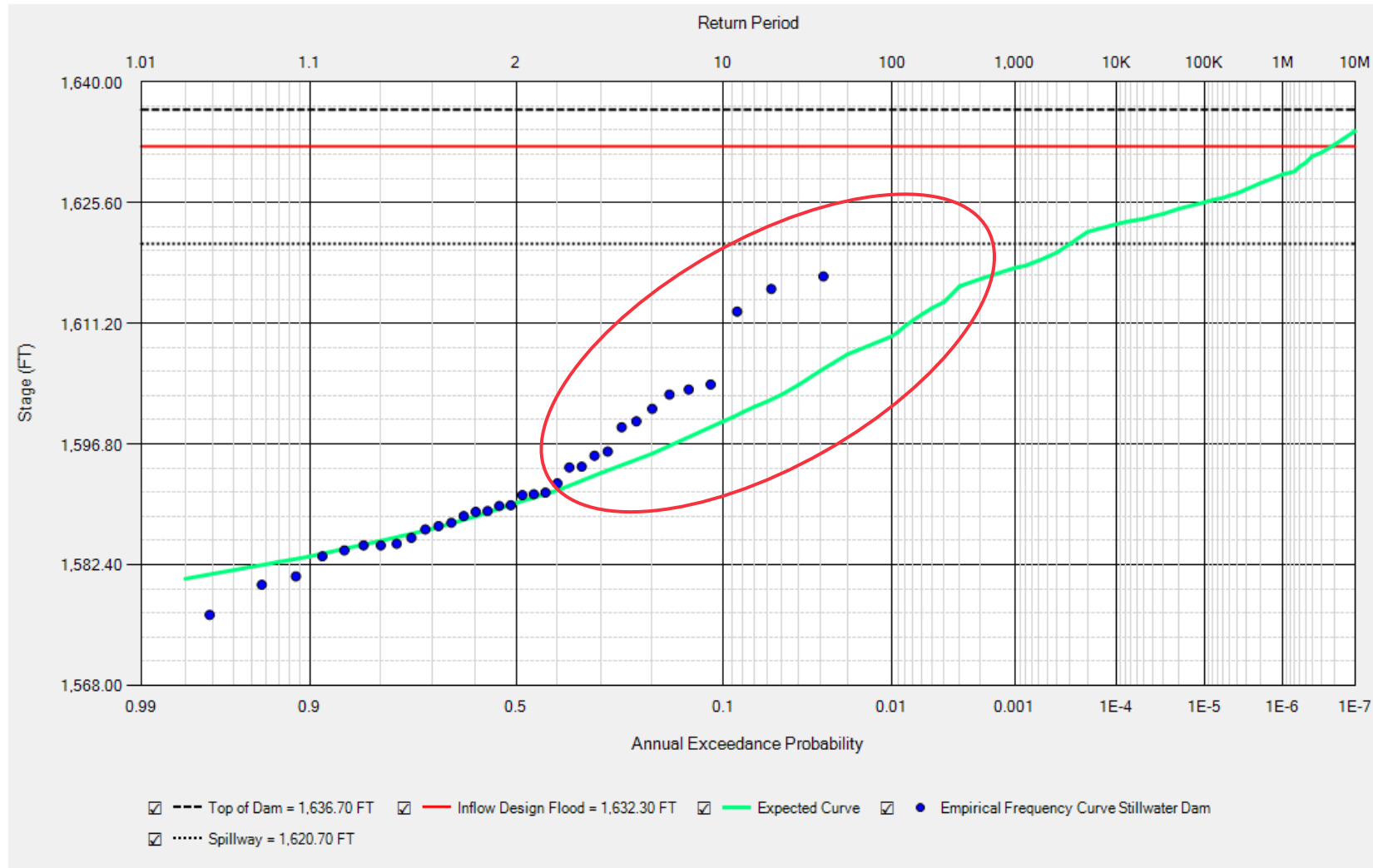
Learning Objectives

- Examine stage frequency curve versus observed events
- Discuss dam operations and methods to calibrate the discharge rating curve
- Demonstrate example calibrations

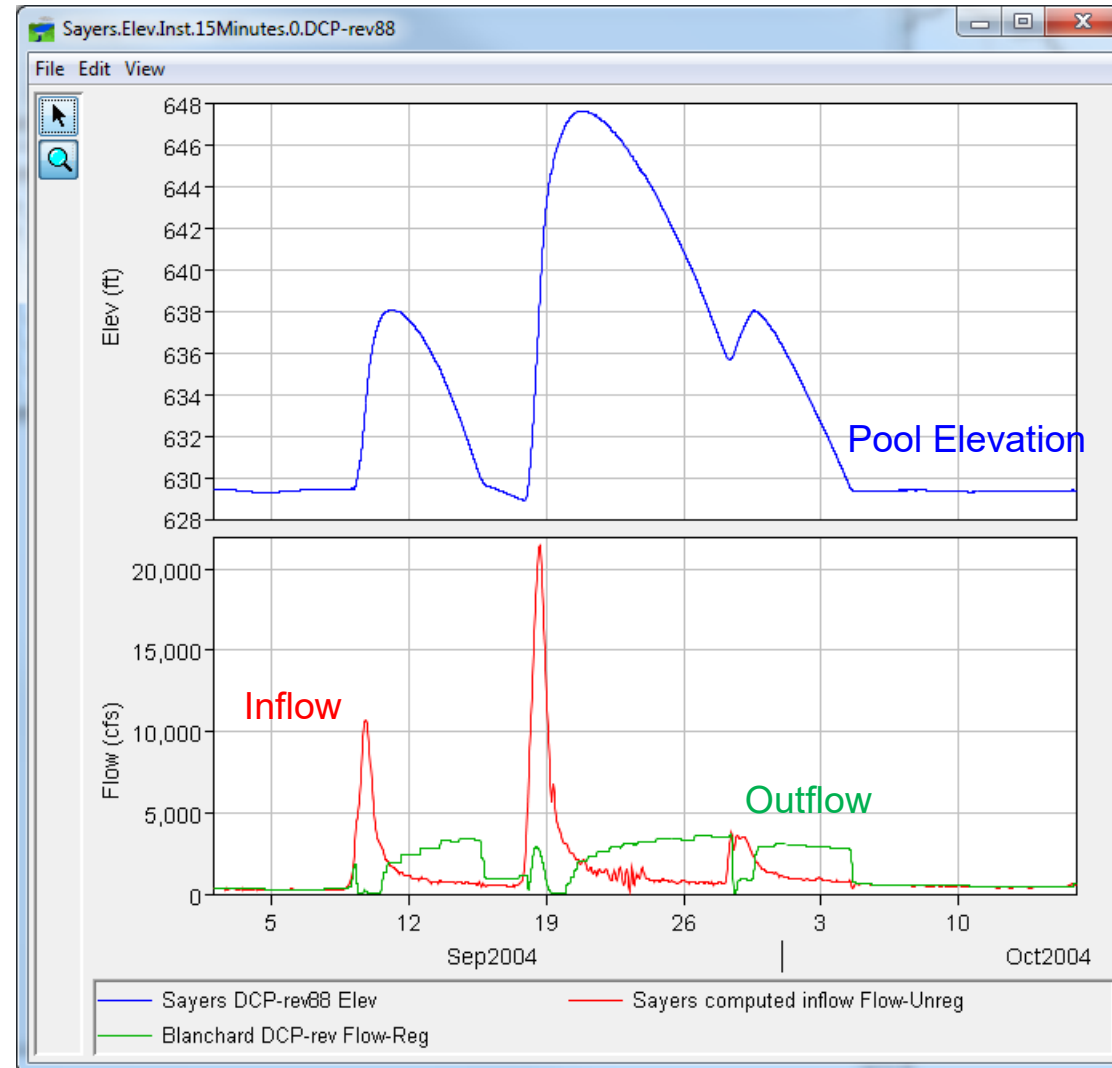


Altoona Dam, GA

Reservoir Calibration - Detection



How Do Flood Control Dams Operate?



Reservoir Calibration Methods

- Observed events
- HEC-HMS
- Guess and check

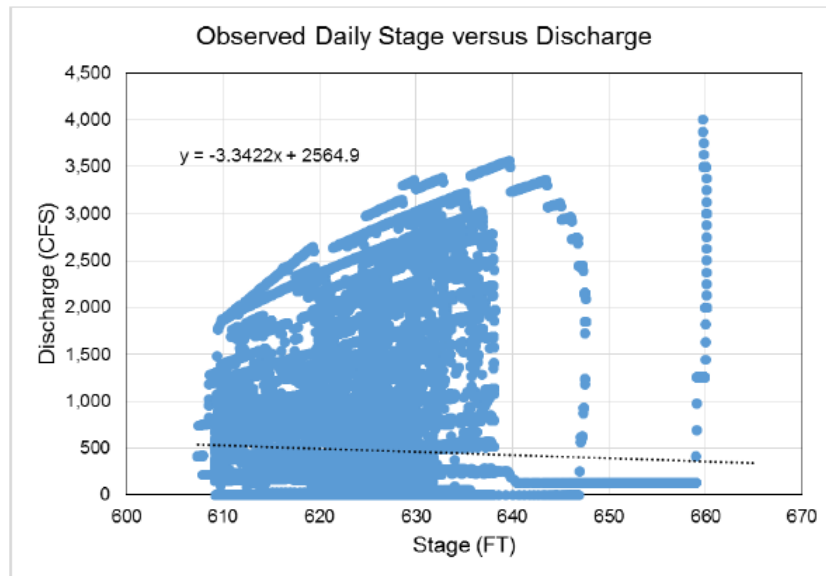
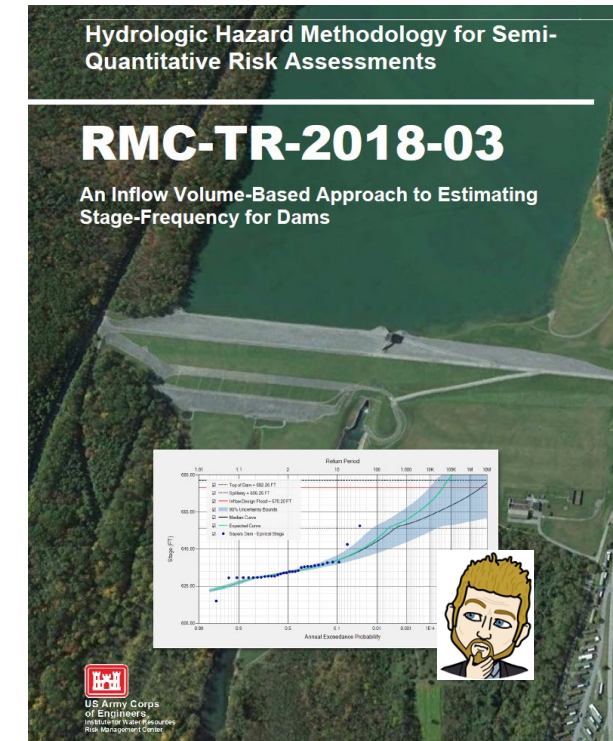
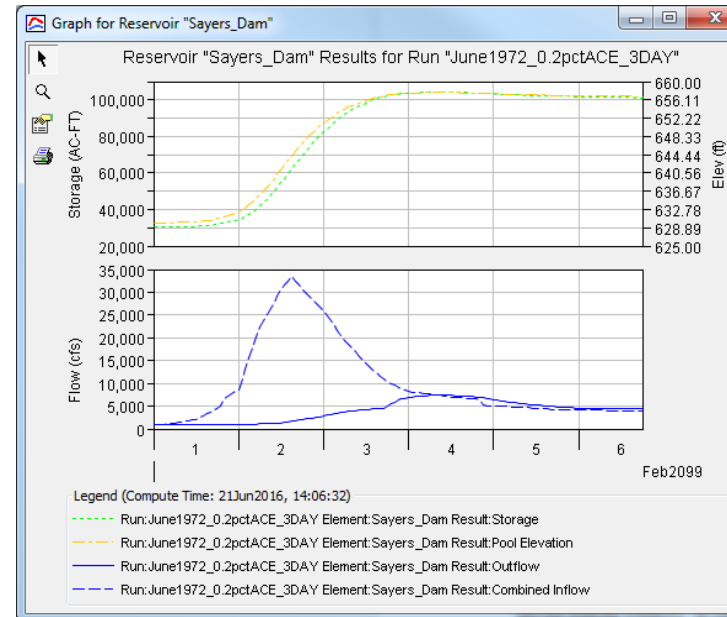
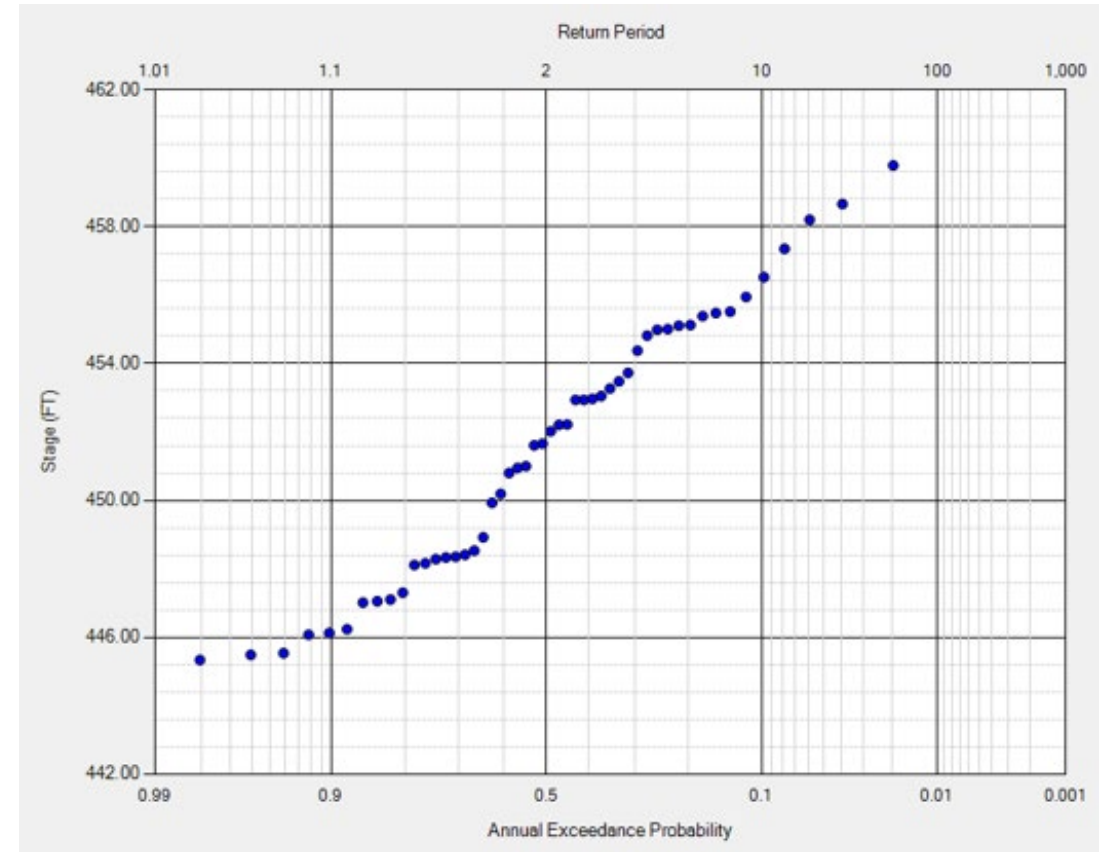


Figure 64: Observed Daily Stage-Discharge X-Y Plot

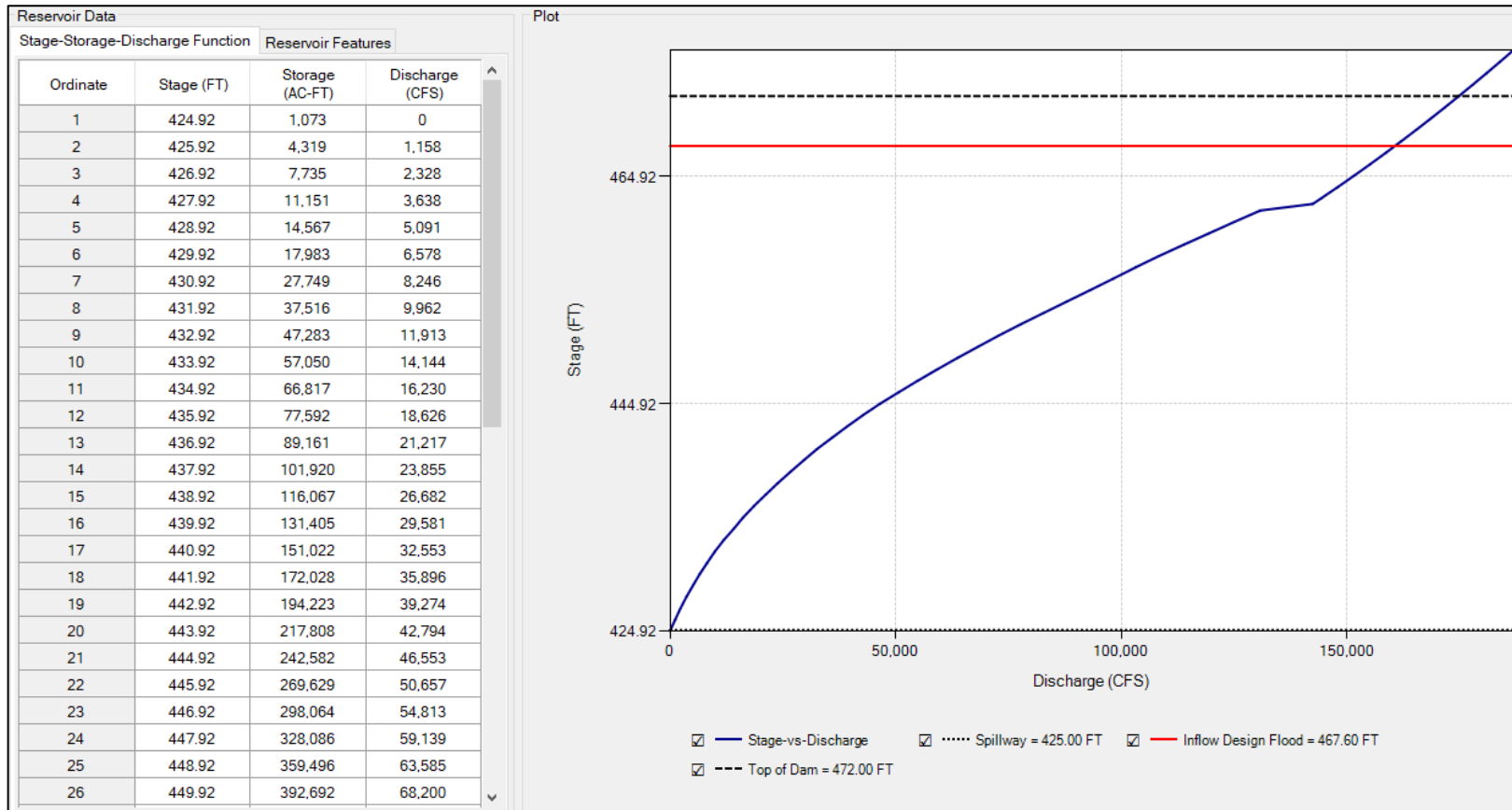


Example Calibration (Gated Dam 1 of 2)



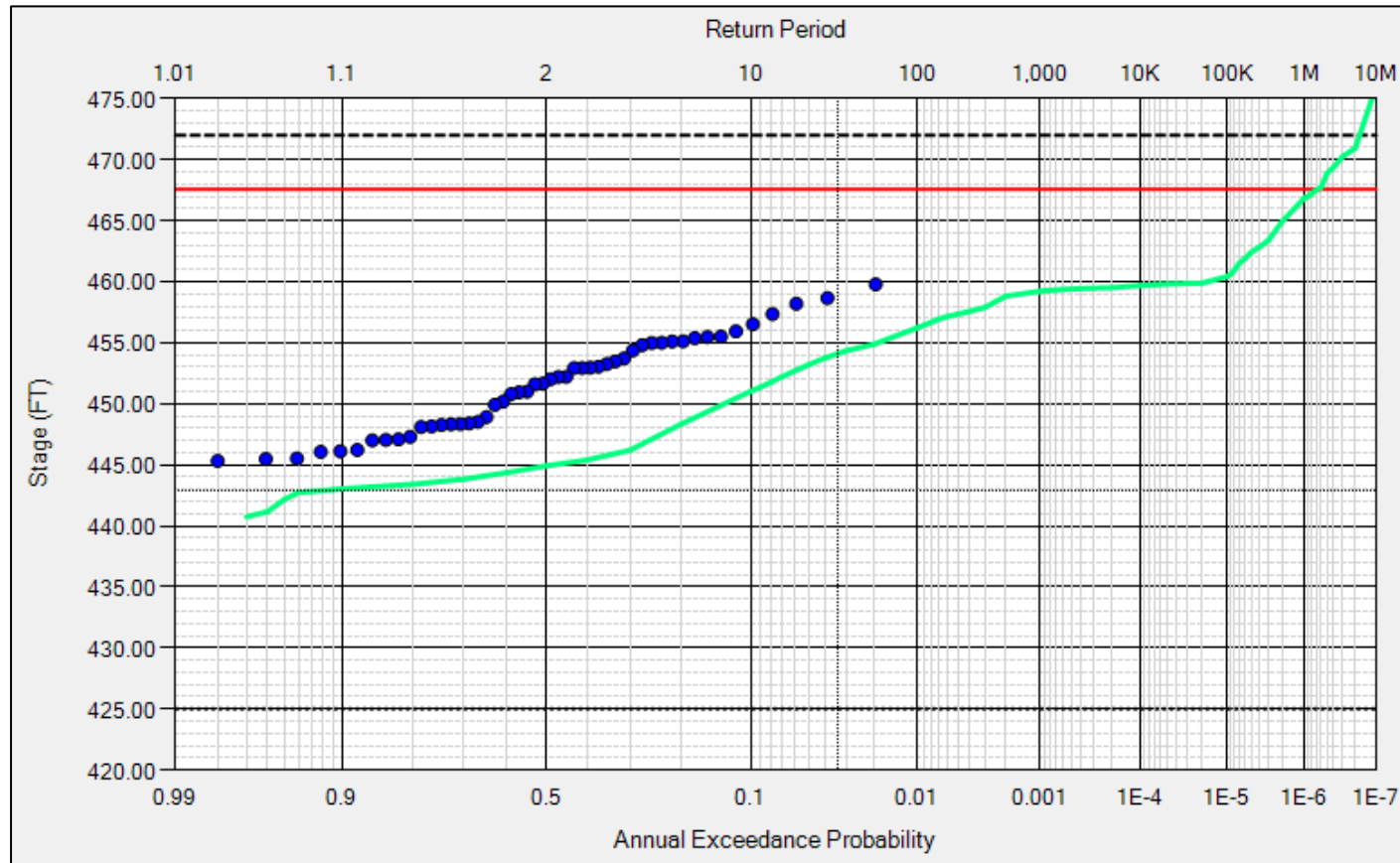
- Gated spillway
- 50 years of record

Example Calibration (Gated Dam 1 of 2)



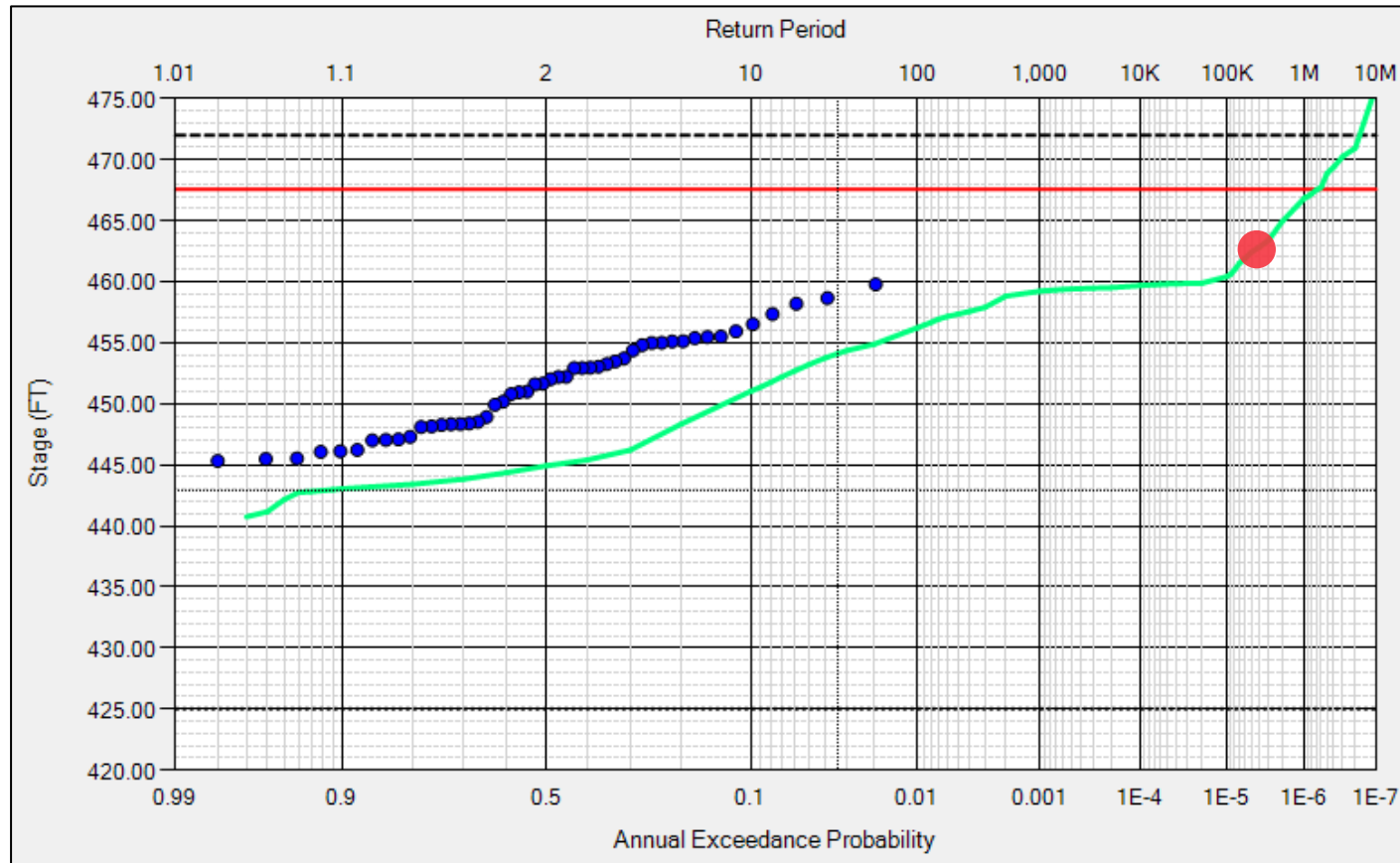
- Max capacity curve used as a starting point

Example Calibration (Gated Dam 1 of 2)



- Max capacity curve used as a starting point

Example Calibration (Gated Dam 1 of 2)



- Max capacity curve used as a starting point

Example Calibration (Gated Dam 1 of 2)

- Keep modifying based on operations

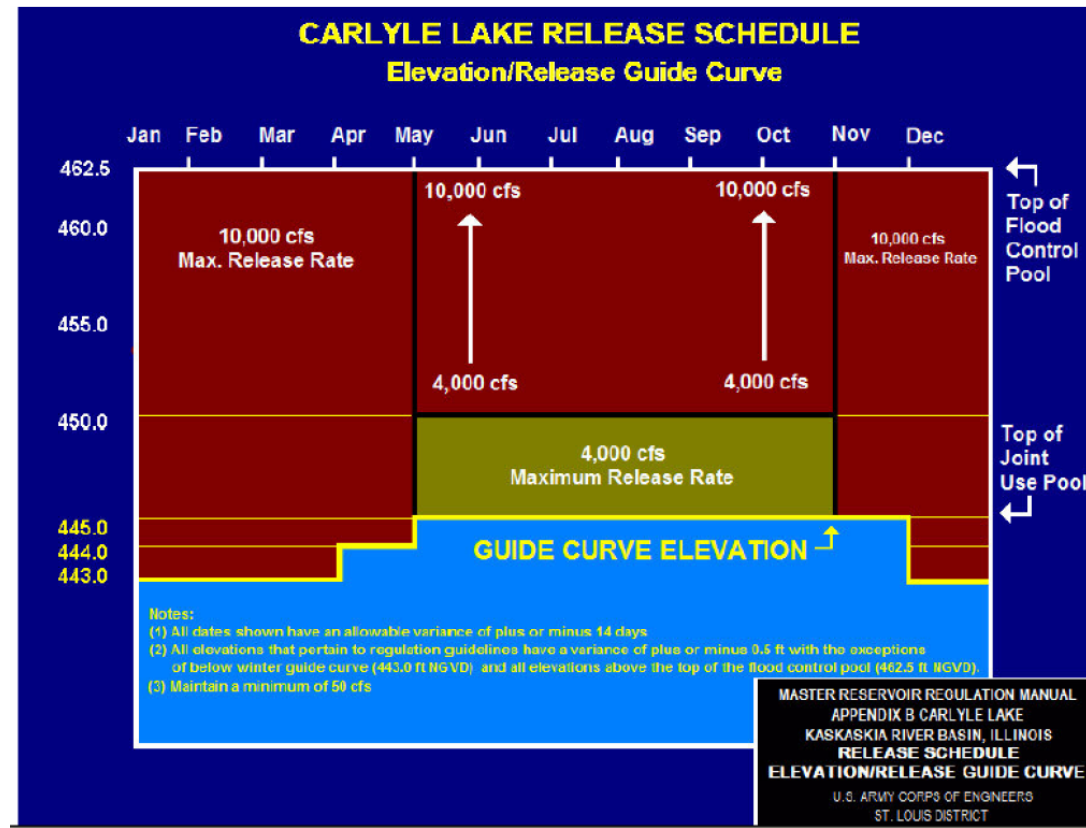
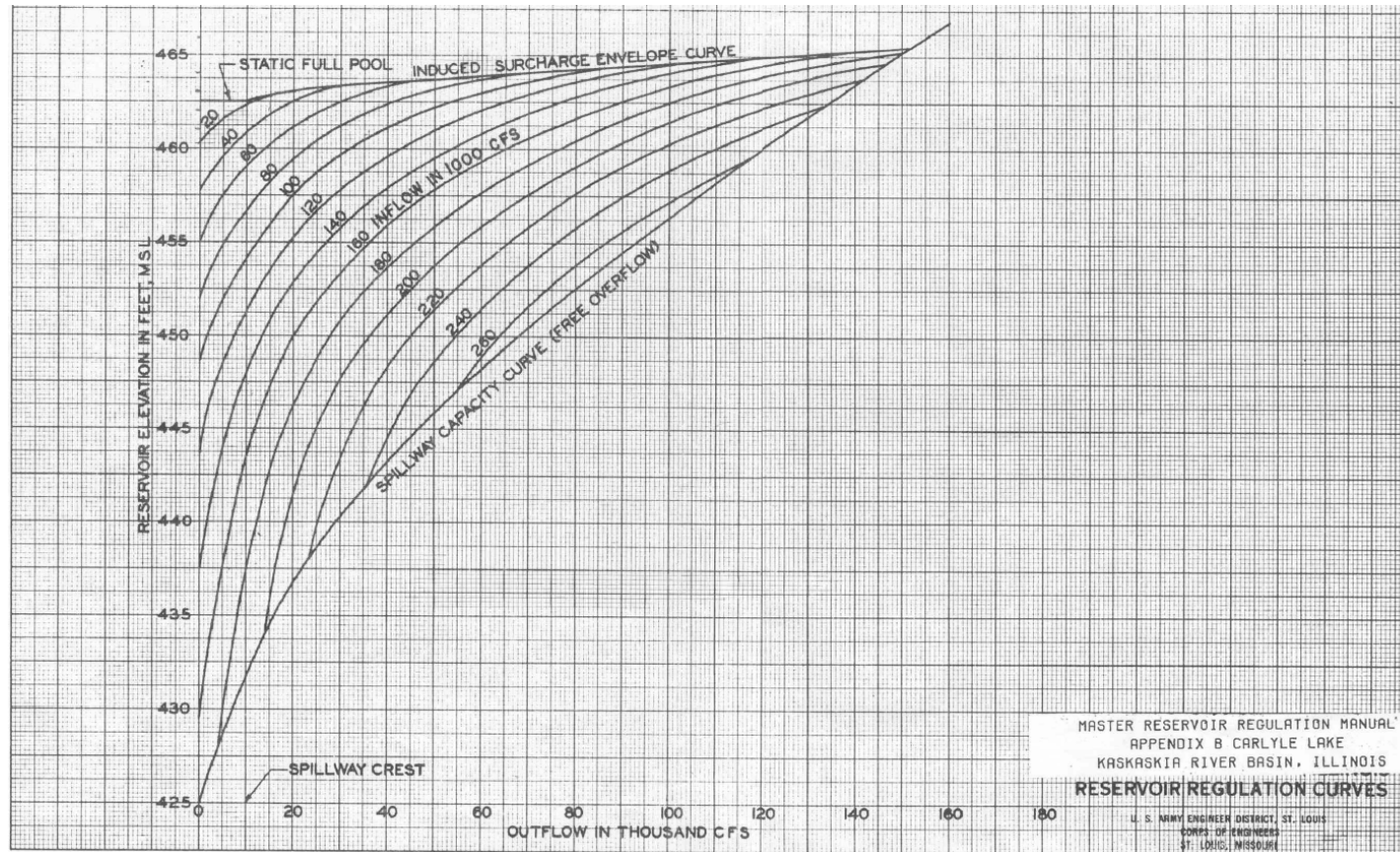


PLATE 6-1

Range of 4,000 to 10,000 cfs

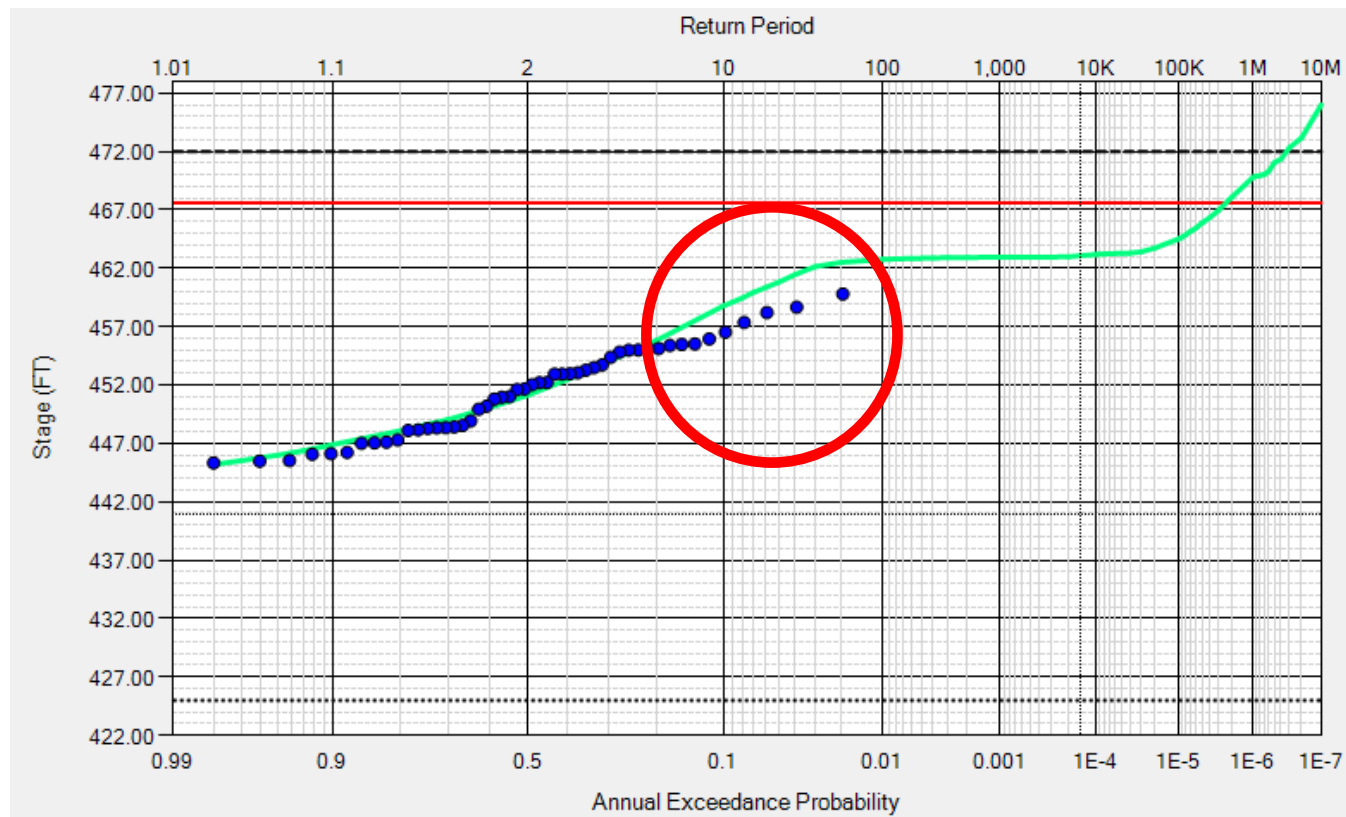
Example Calibration (Gated Dam 1 of 2)

- Keep modifying based on operations



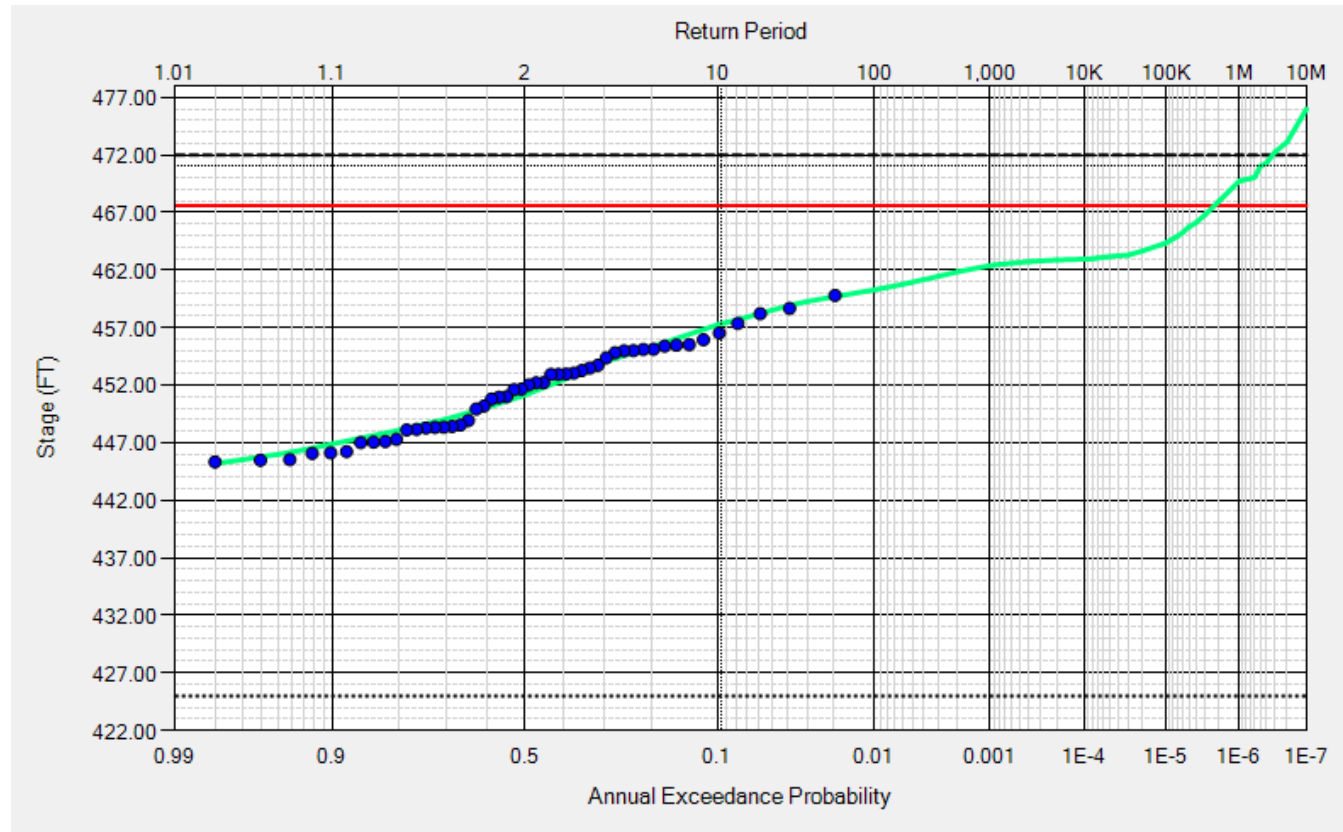
Example Calibration (Gated Dam 1 of 2)

- Keep modifying based on operations



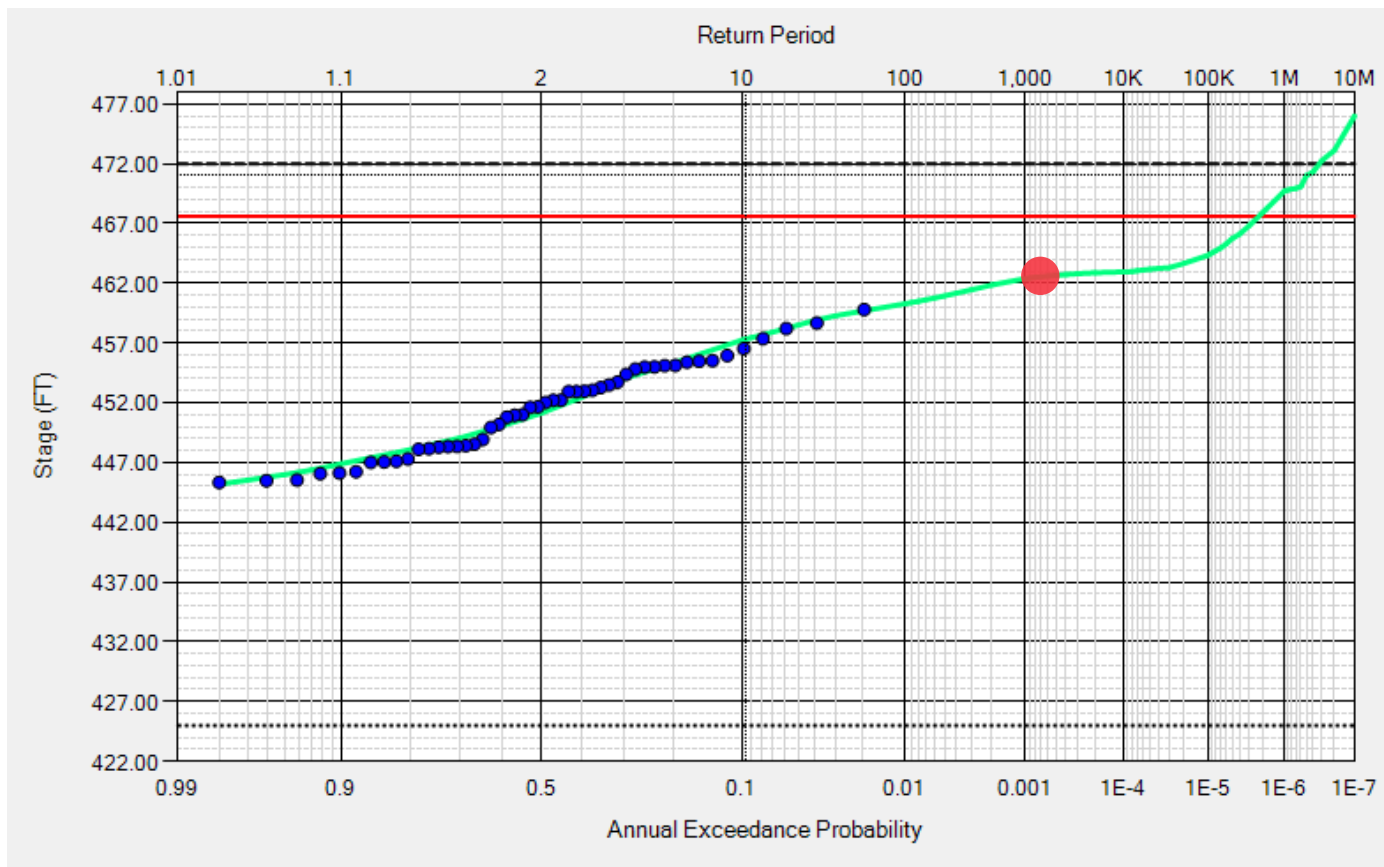
Example Calibration (Gated Dam 1 of 2)

- Very important to calibrate reservoir model

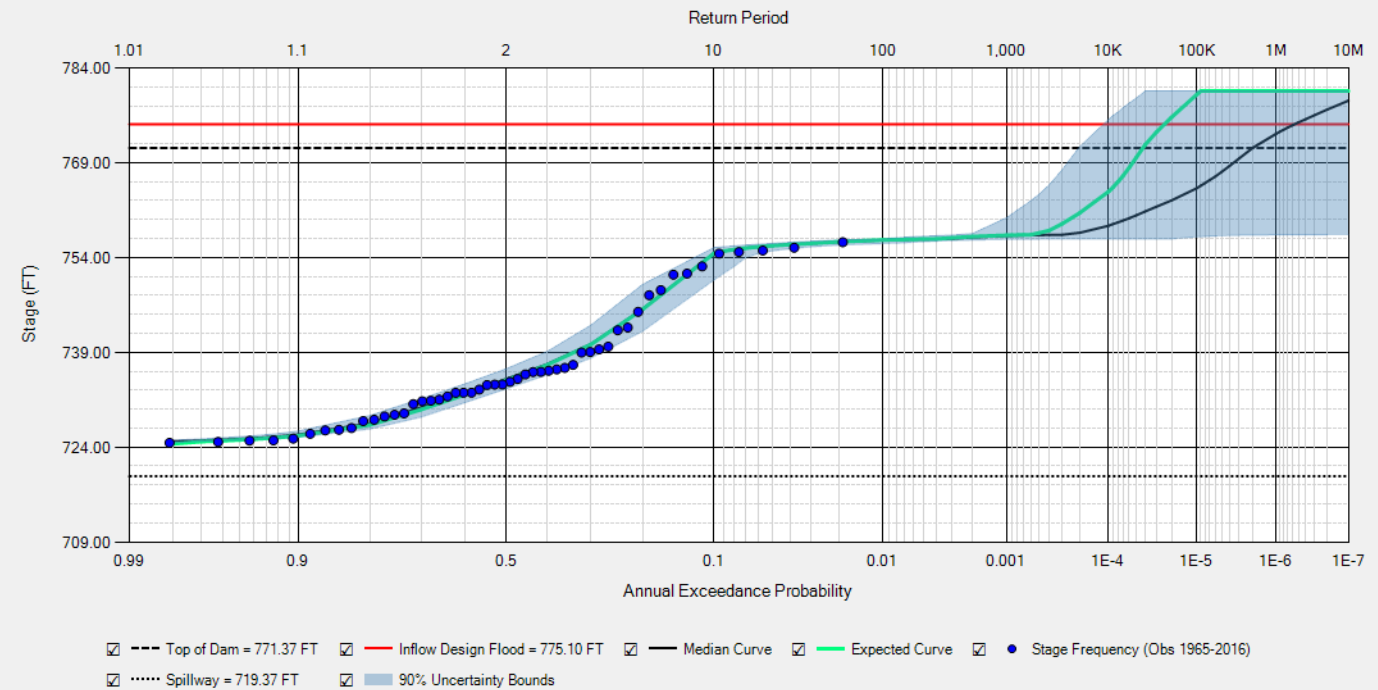
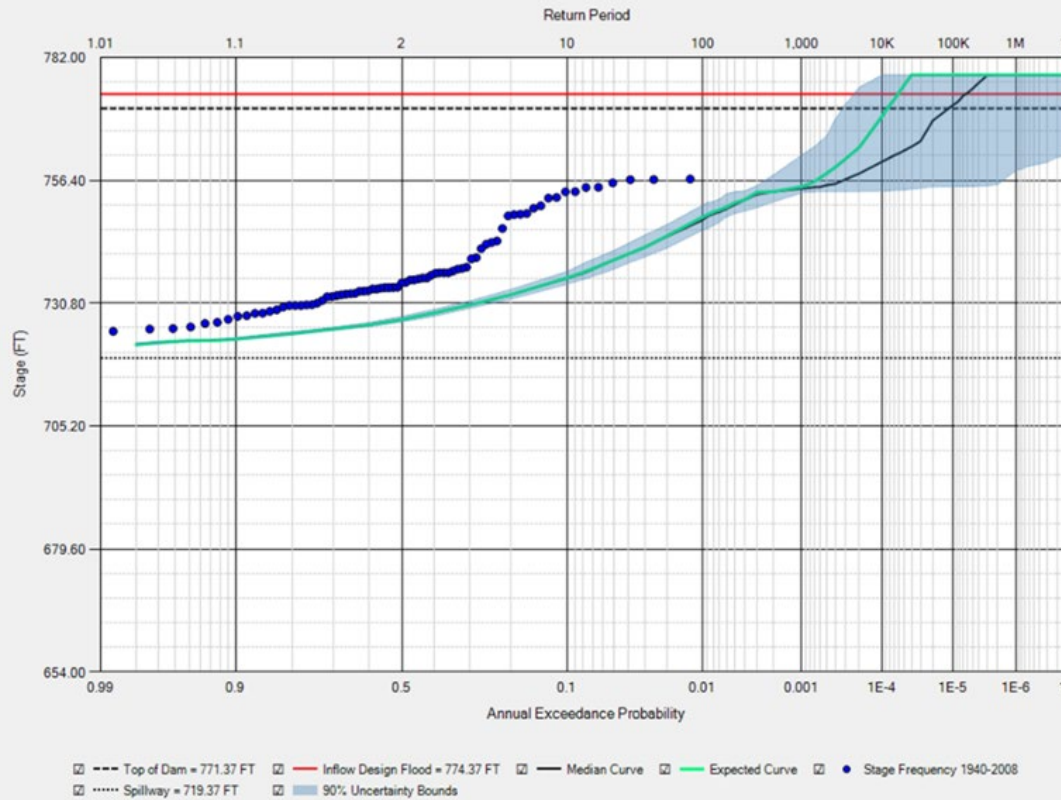


Example Calibration (Gated Dam 1 of 2)

- Very important to calibrate reservoir model



Example Calibration (Gated Dam 2 of 2)



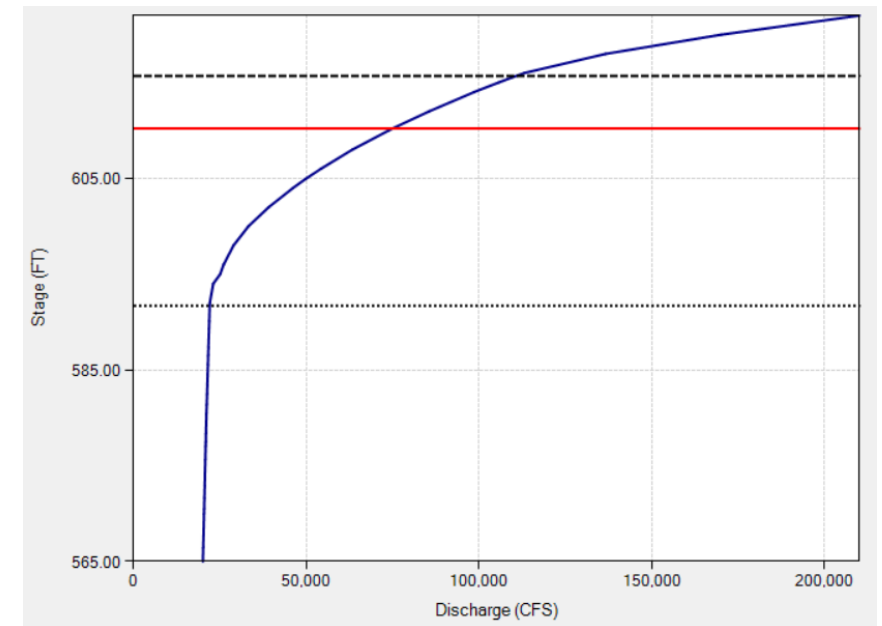
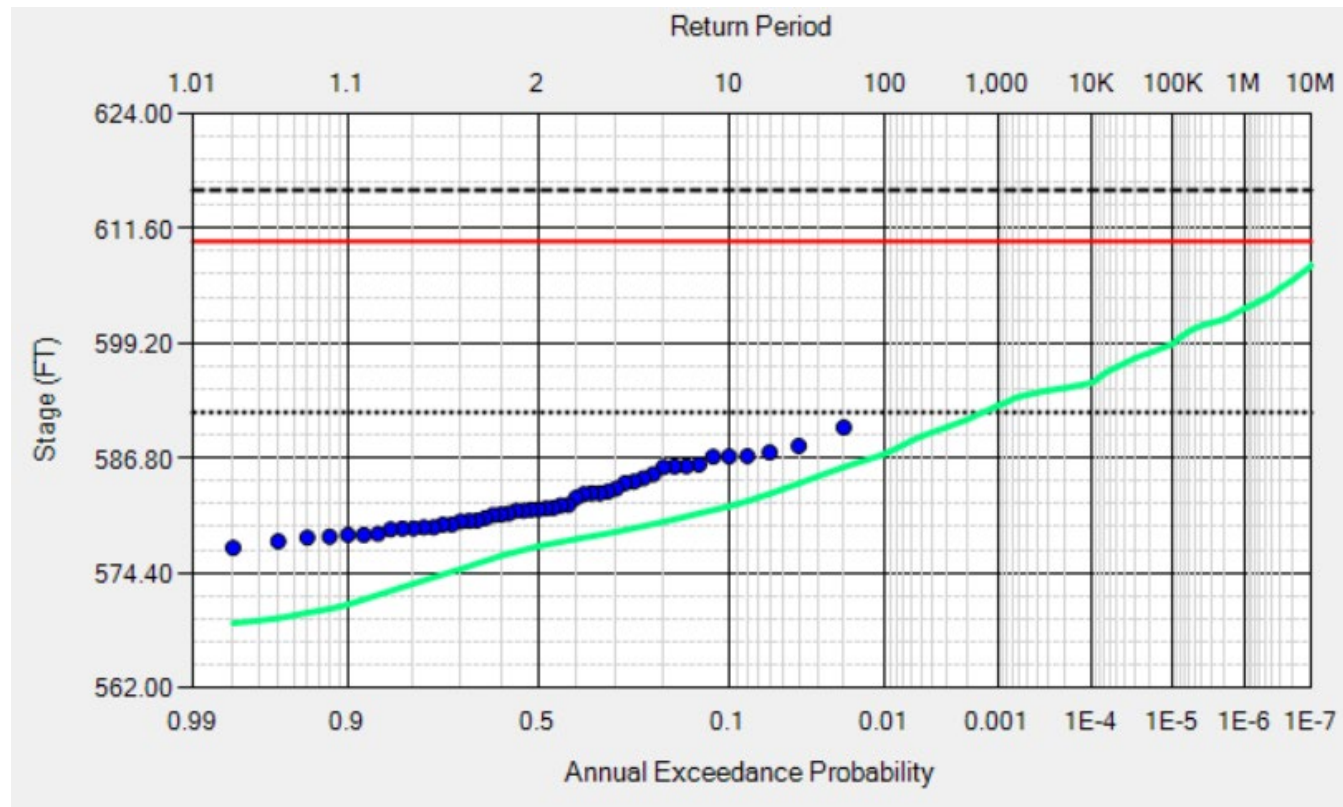
Example Calibration (Ungated Dam) Blakely Mountain Dam

- Calibration for project with ungated spillway



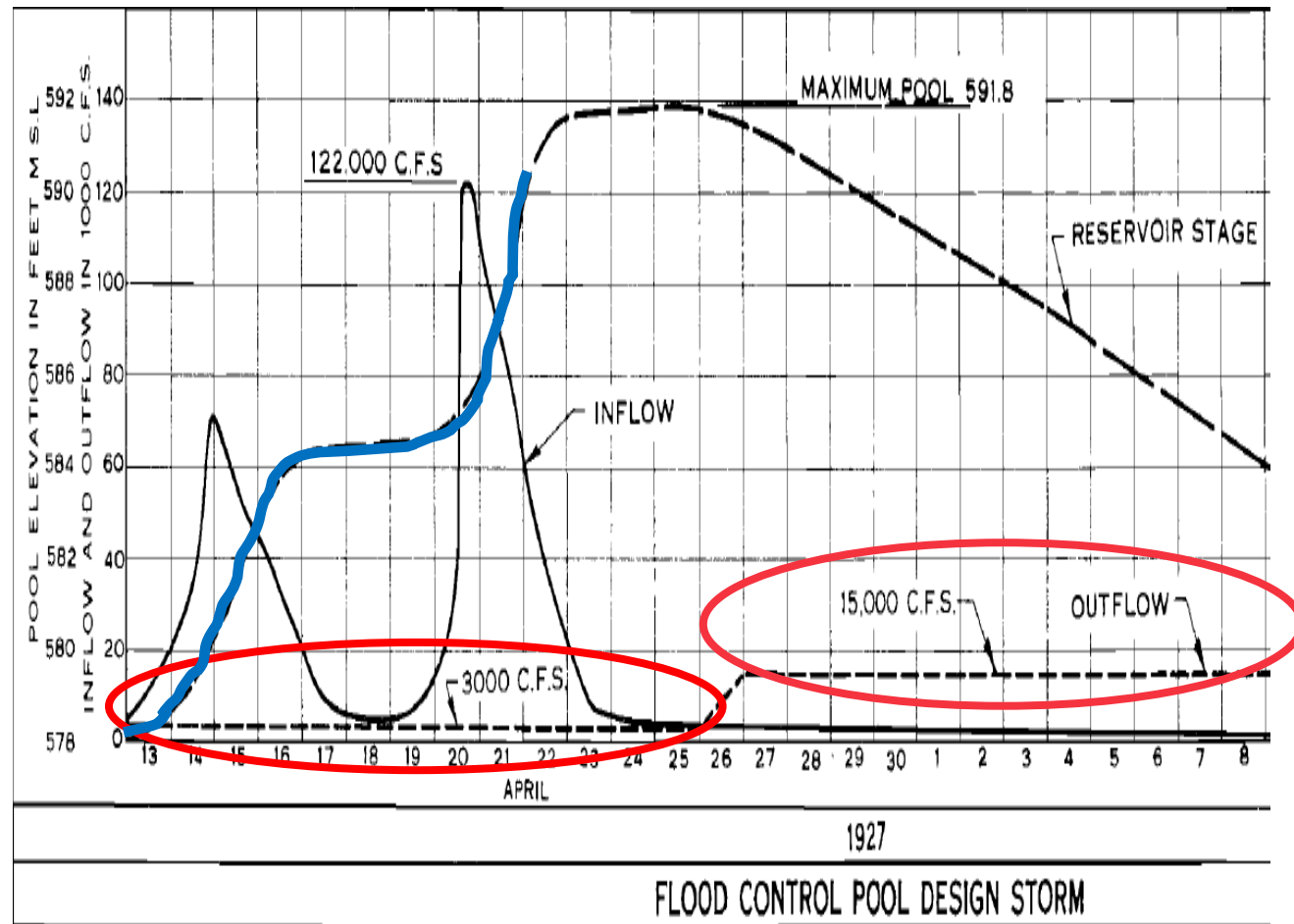
Example Calibration (Ungated Dam) Blakely Mountain Dam

- Calibration for project with ungated spillway



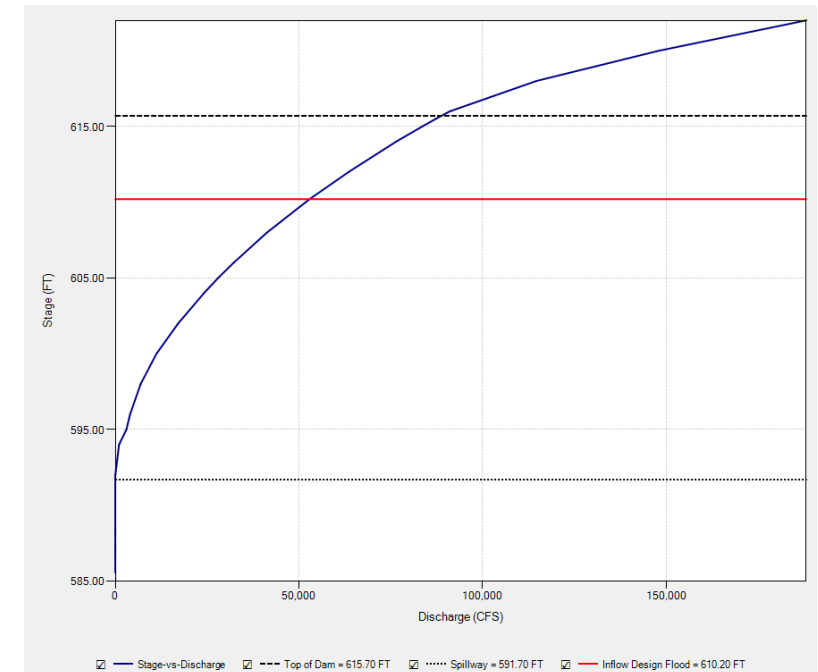
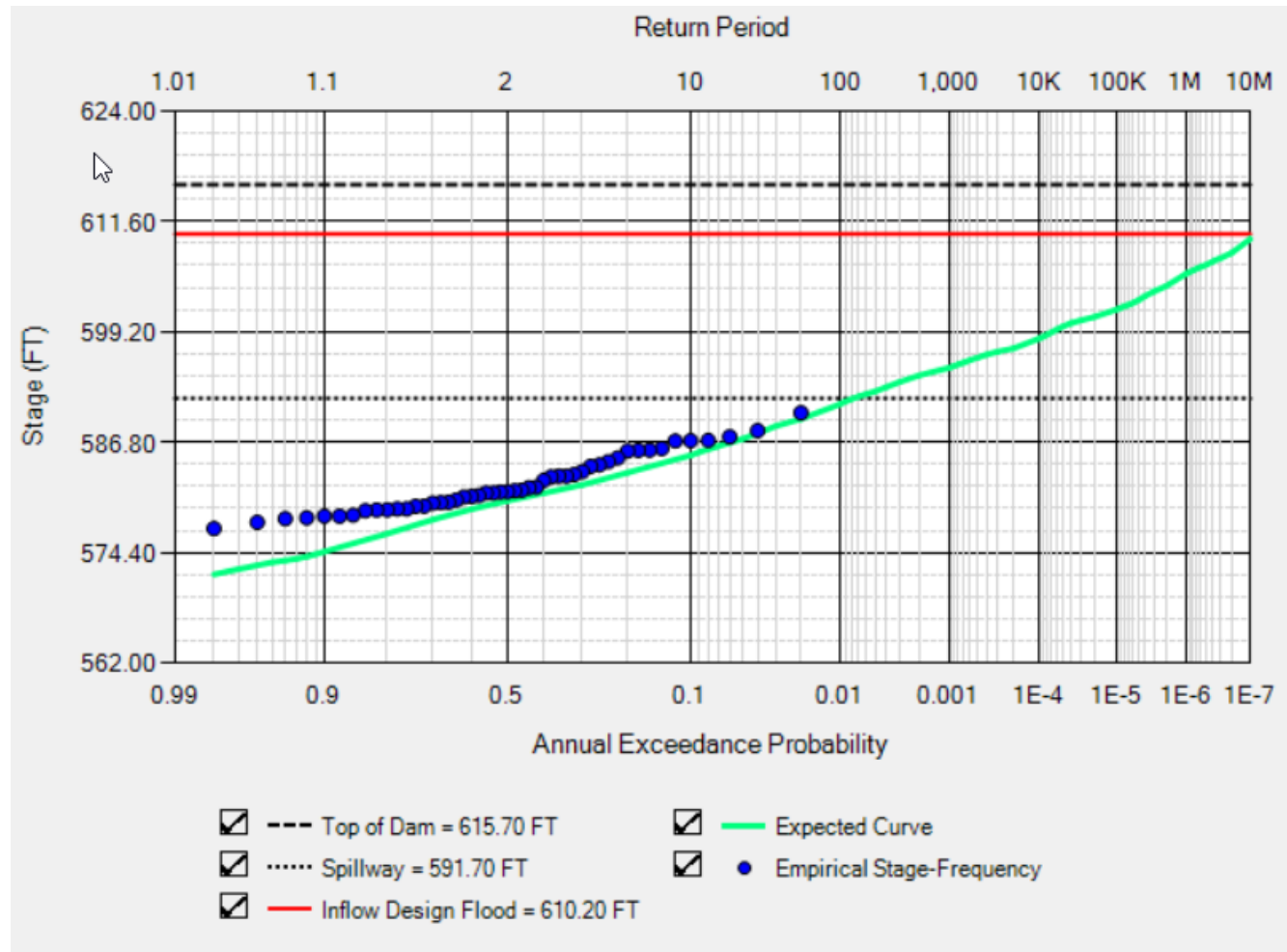
Example Calibration (Ungated Dam) Blakely Mountain Dam

- Calibration for project with ungated spillway



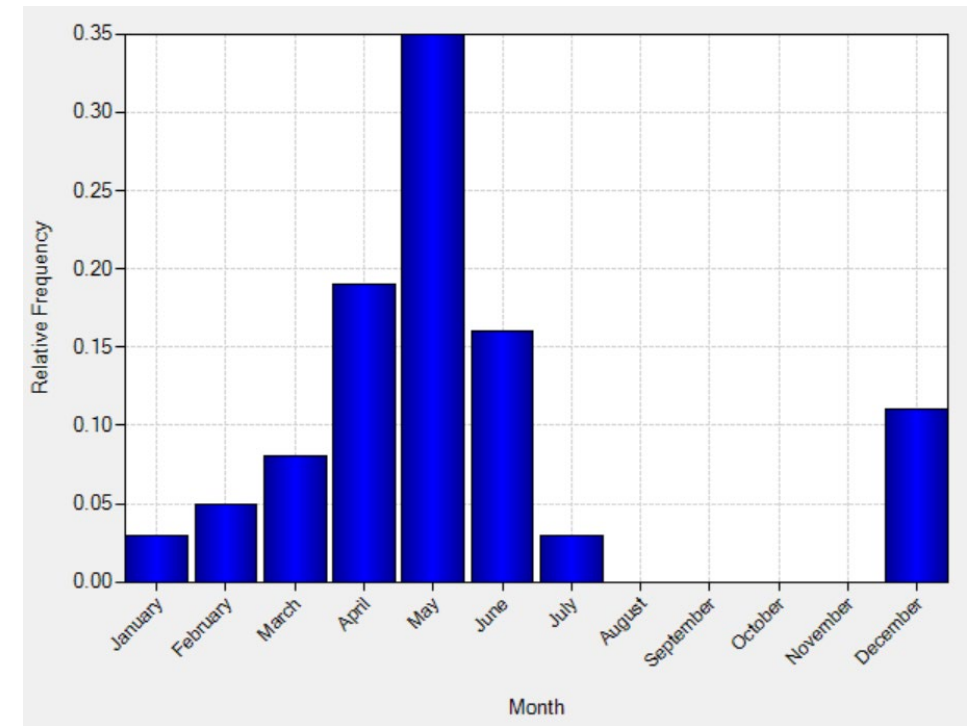
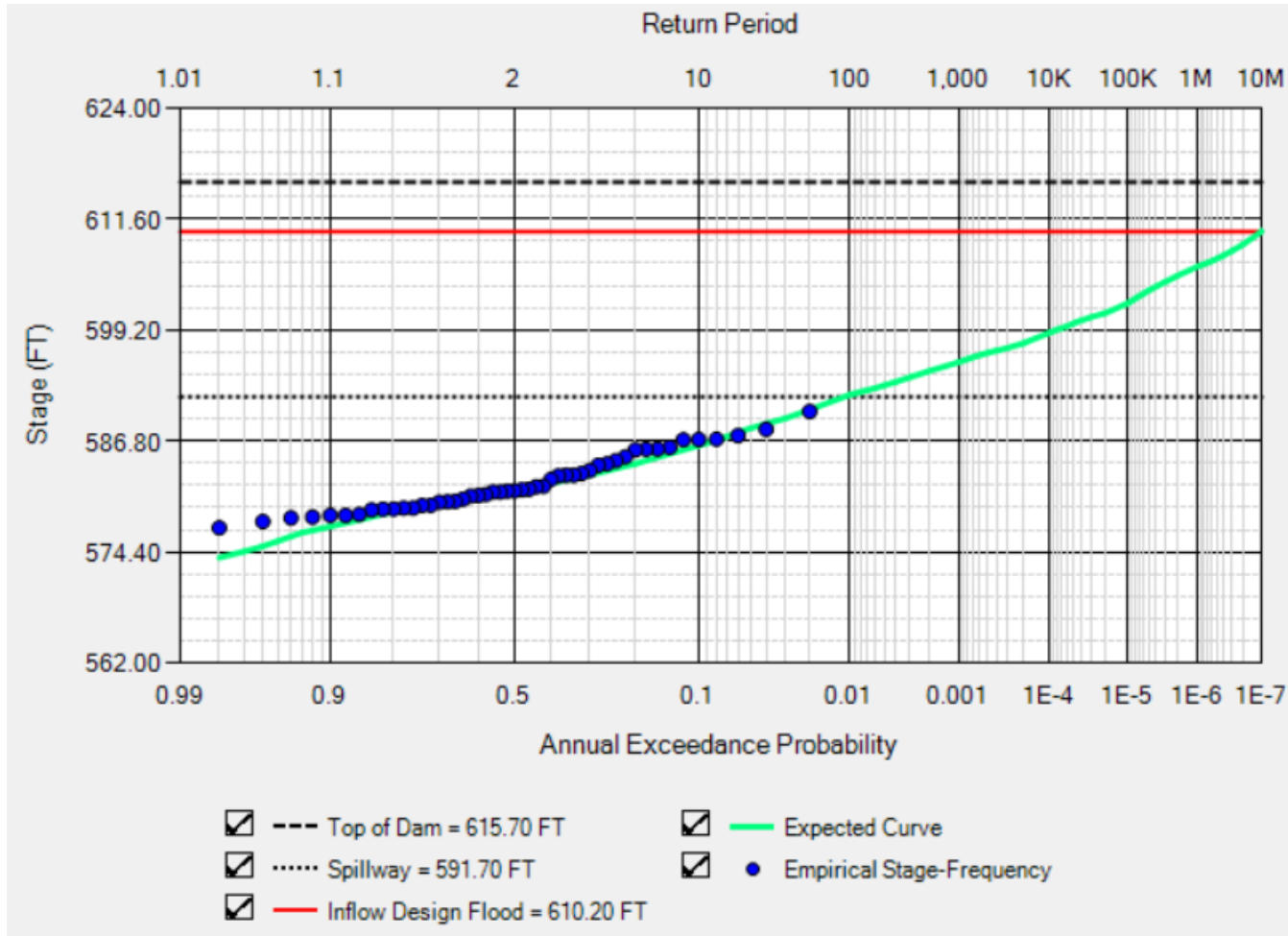
Example Calibration (Ungated Dam) Blakely Mountain Dam

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Example Calibration (Ungated Dam) Blakely Mountain Dam

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Questions