

NHA – SW Regional Meeting

August 27, 2009

Ramping Rates and Public Safety

- Project Configuration
- Ratio of Natural Stream Flows to changes in rates

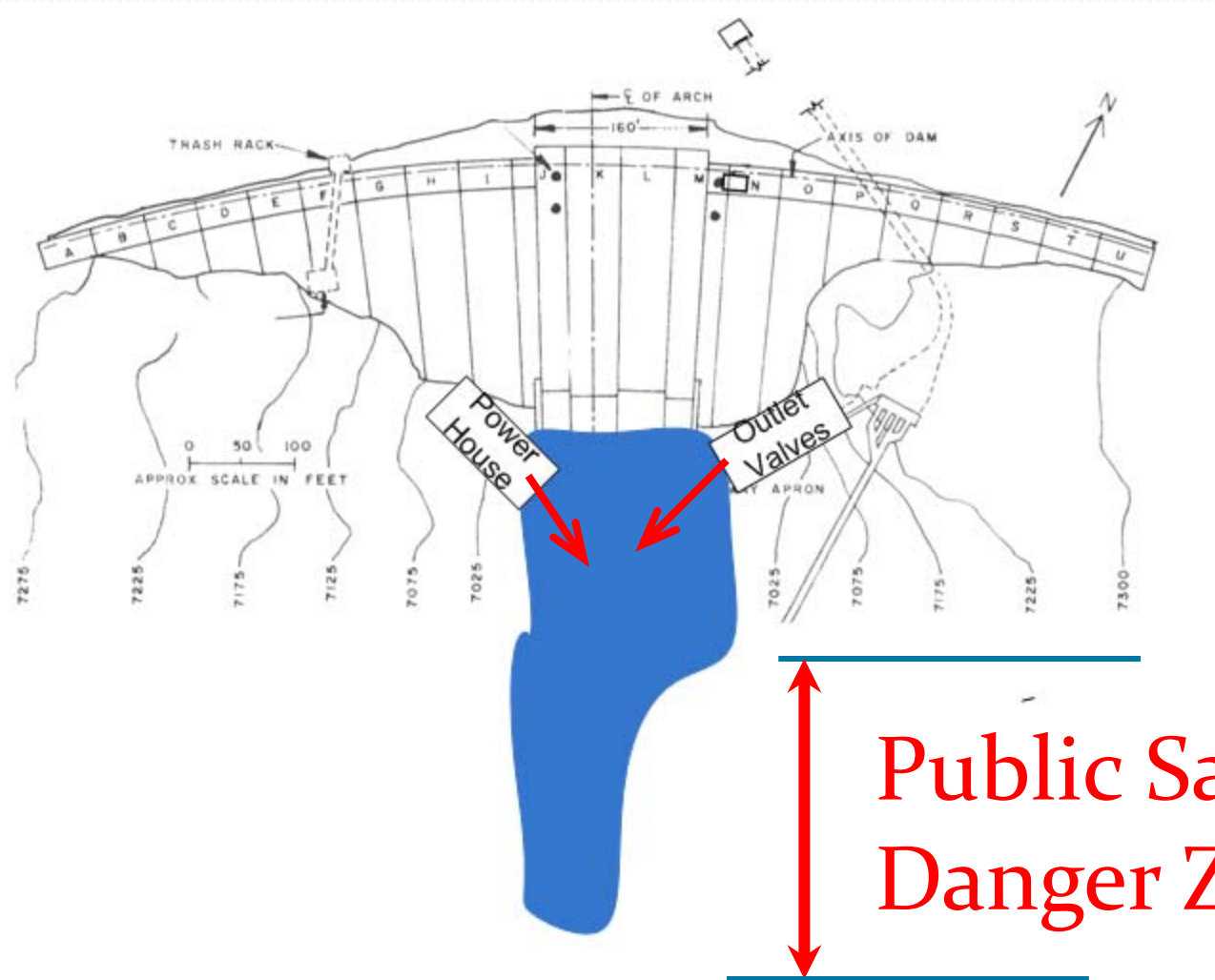
Many FERC Licenses contain an article that requires specific ramping rates, Why?

- Protect the Fishery
- Protect the Recreator
- Reduce Fiver and Bank Erosion

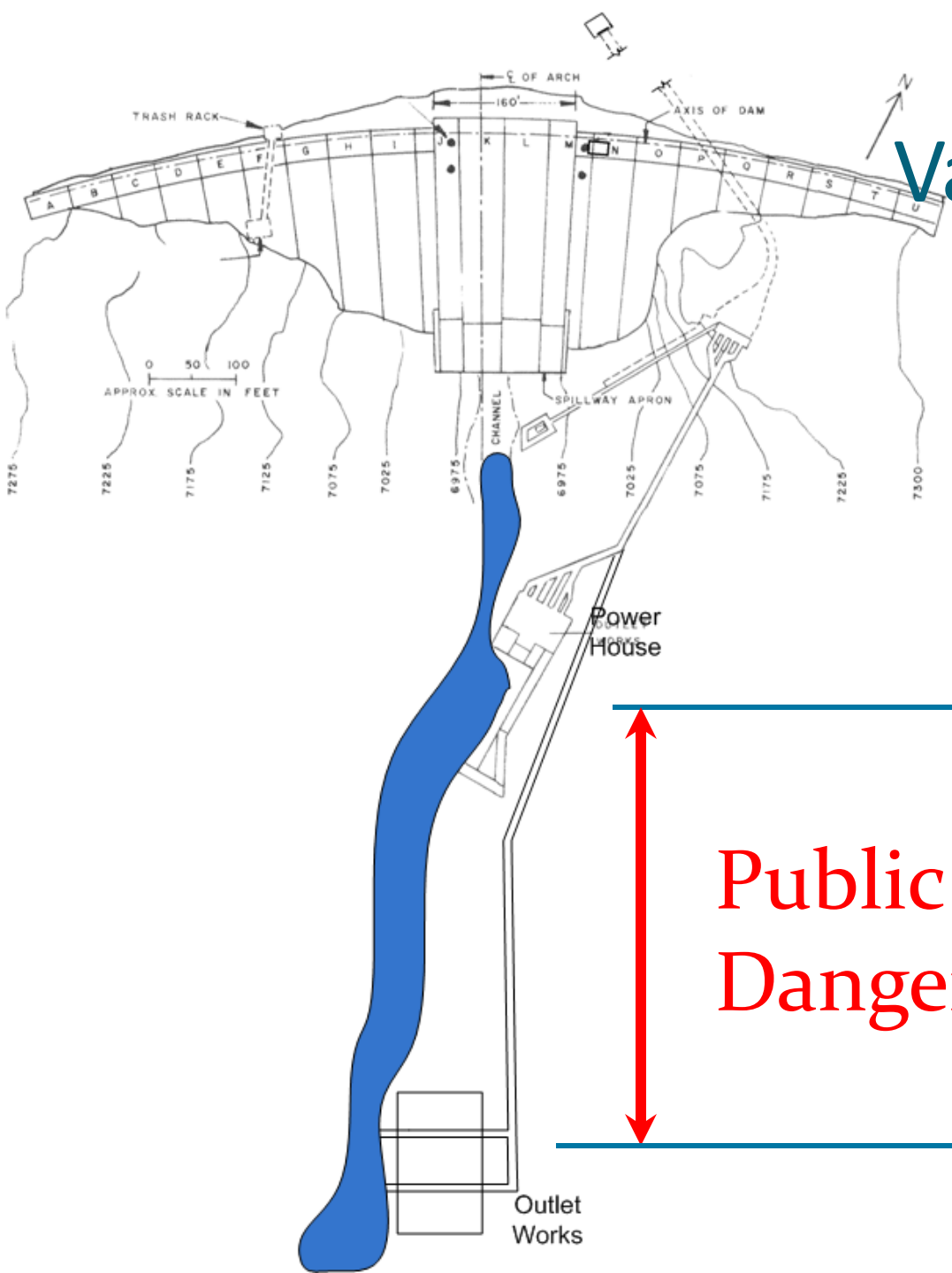


Ramping Rates and Unintended Consequences for Public Safety

Valve House /Power House Configuration 1



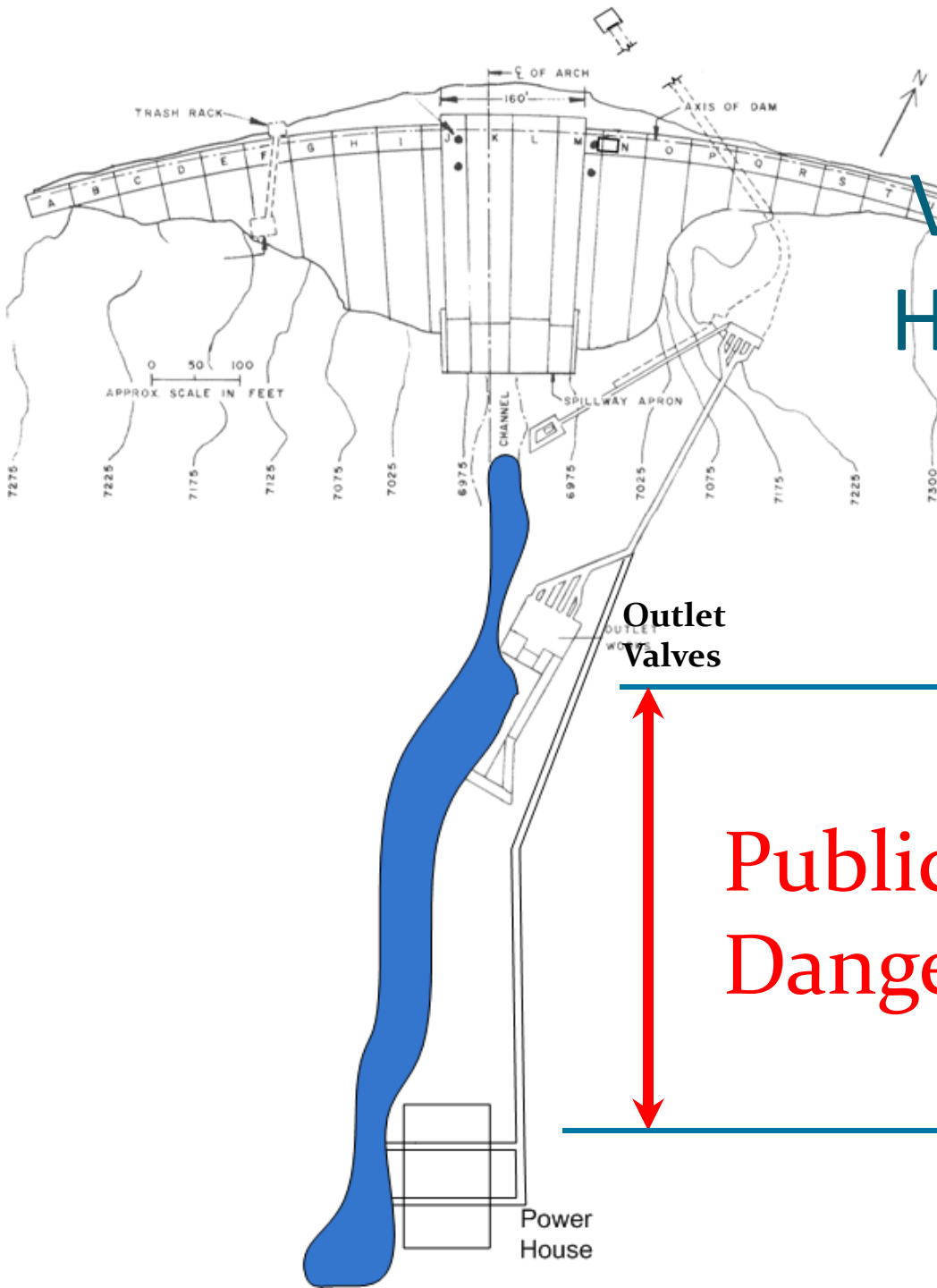
Public Safety
Danger Zone



Valve House/Power House Configuration 2



Public Safety
Danger Zone

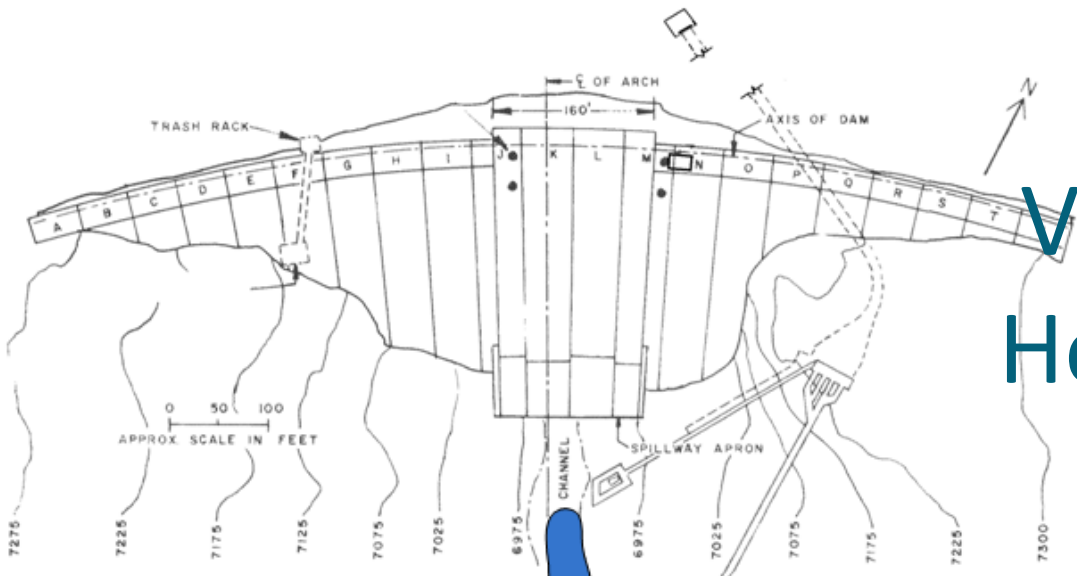


Valve House/Power House Configuration 3

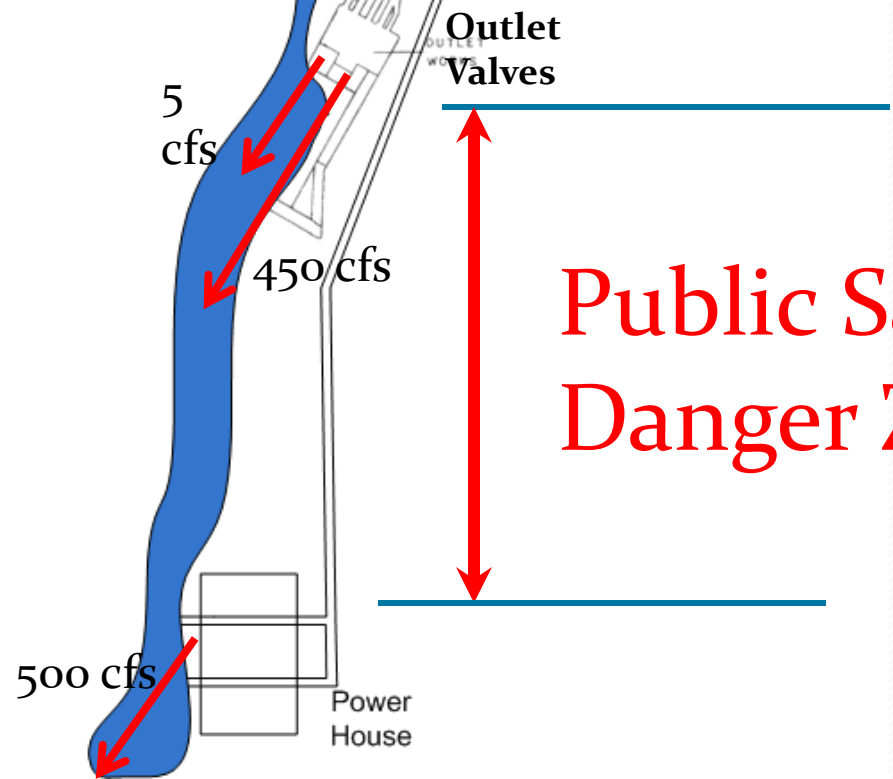
Public Safety Danger Zone

Example of Ramping Requirements

- Required to ramp up and down no more than 50 cfs /hour
- Hydro is releasing 500 cfs
- Power Failure
- Turbine flows go to zero in minutes
- Valves at Valve House are opened automatically to 450 cfs in < 30 min.



Valve House/Power House Configuration 3



HPC Responses to Ramping Rate Pole

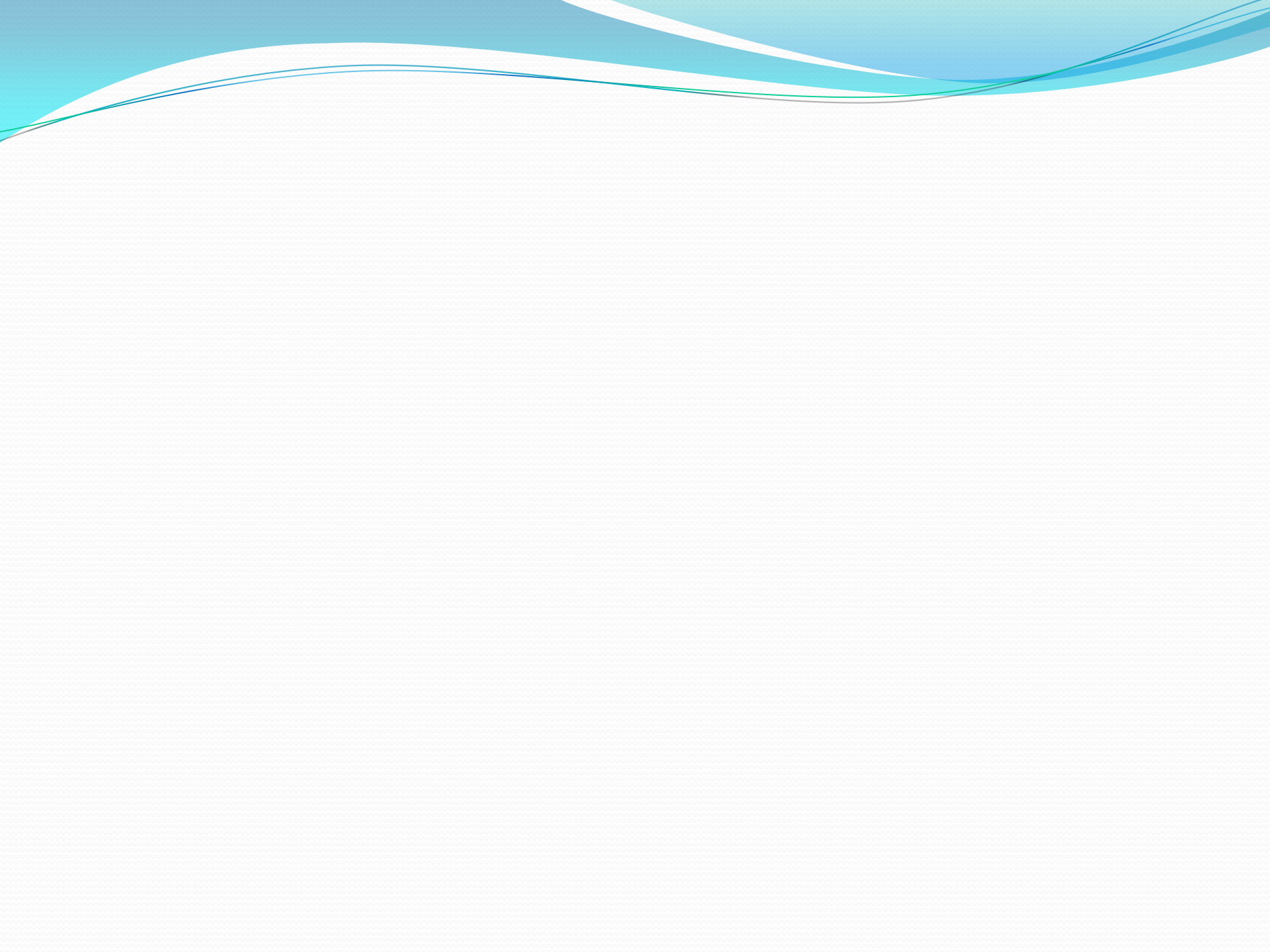
- 30% Indicated that were like Configuration #1
- 15% Probably add more Staff to be at site 24/7
- 20% Add Cameras to view risk zone but would not make change unless they had onsite visual confirmation
- All - Automation Only for Configuration #1

Discussion

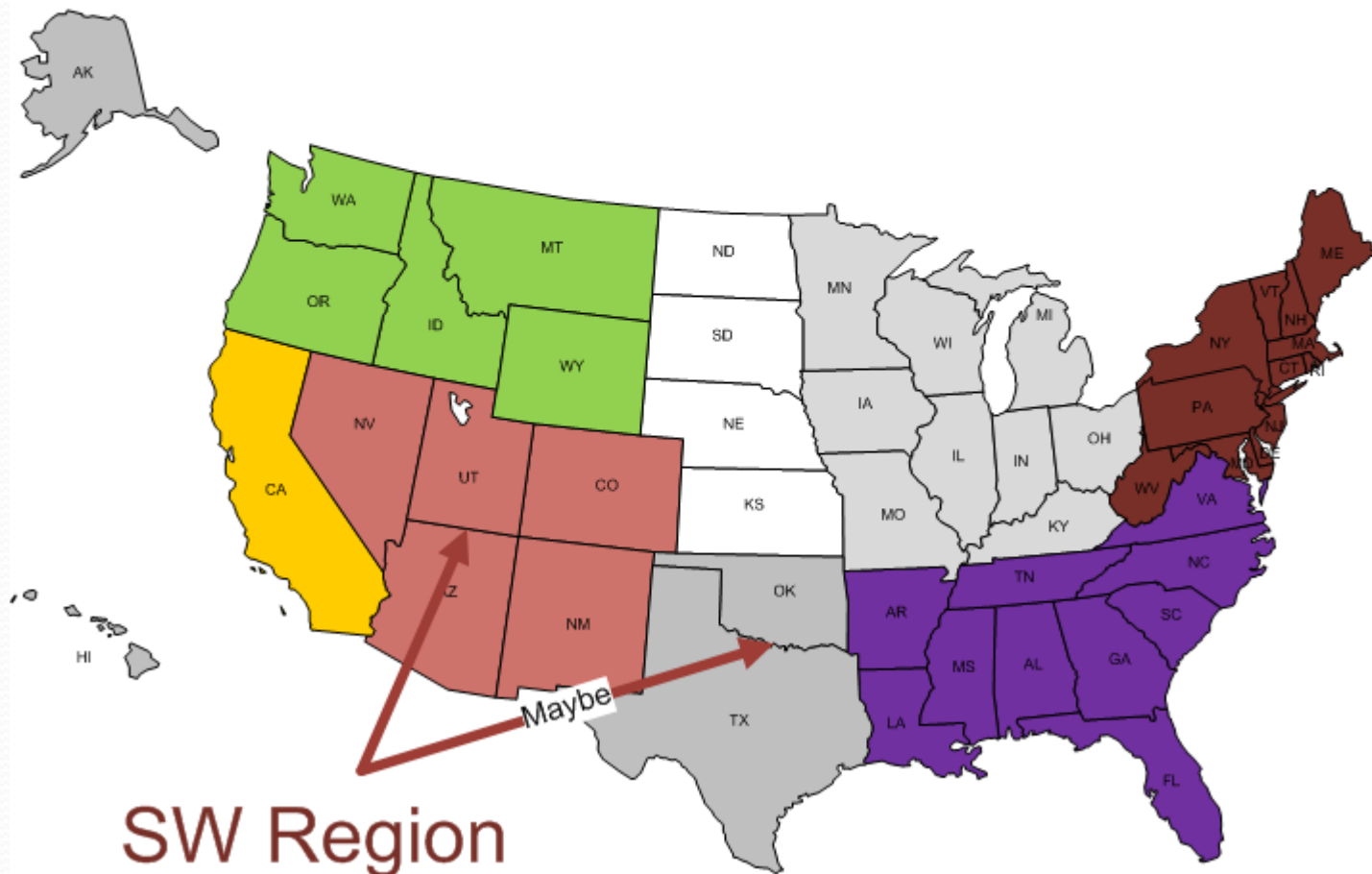
- Who is responsible?
 - The FERC, Owner, Others?
- Are there other solutions?
- Should the FERC review this criteria?




Questions?



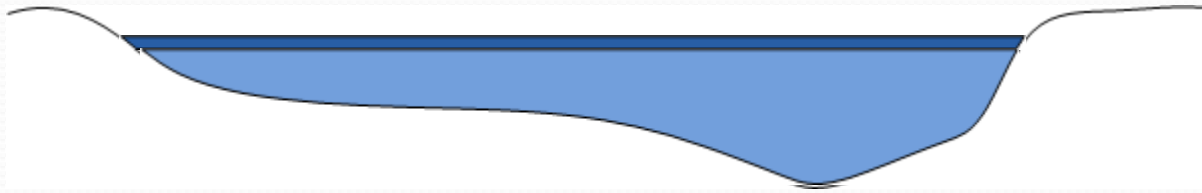
NHA Regions Reflect the FERC Regions



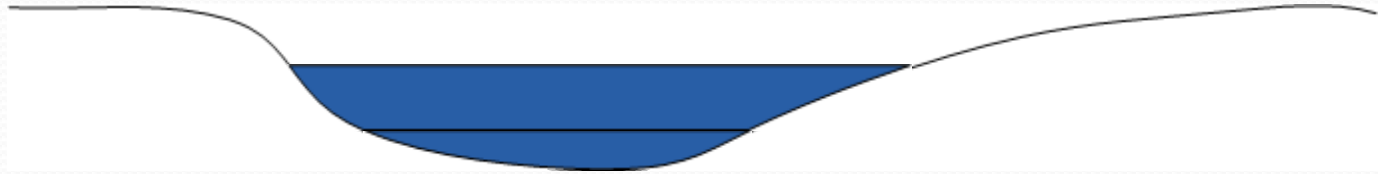


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- Stream Geometry and Ramping Rates
 - Large Rivers
 - Small Mountain Streams

Large Rivers, not much change



Effects on Small Streams



OR

