Recent Progress:

1. Noise Agent Created
2. Deadband Experimental Results
3. GitHub updated:
   `https://github.com/thadhaines/`

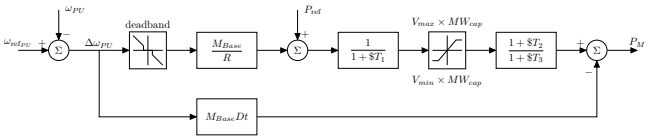
Current Tasks:

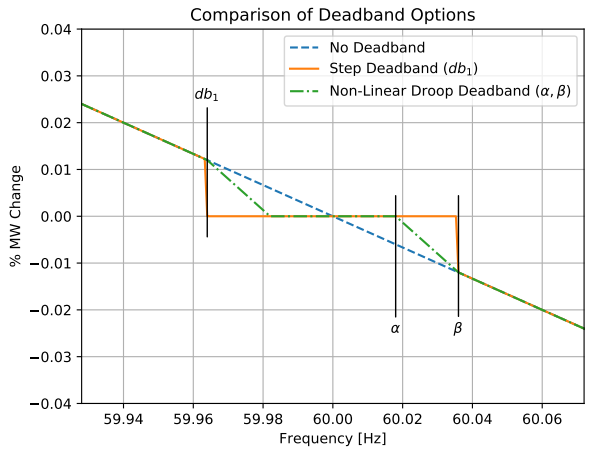
1. Paper for IEEE PES
2. Continue to refine BA ACE actions.
3. Thesis work

Current Questions:

1. Realistic AGC results and/or tuning?
2. Typical deadbands of AGC?
3. IEEE Paper outline or title?
   Long-Term Effect of Governor Deadband on Valve Travel

Deadband Explained



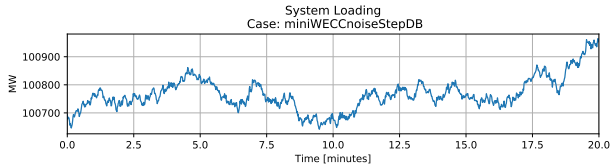


MiniWECC AGC Settings

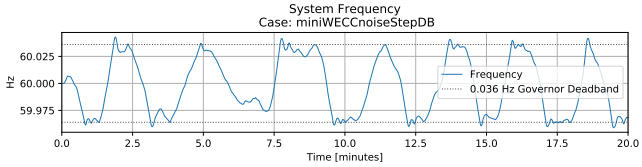
- 15 second ACG Action Time
- PI filtered ACE
- 15 Second Windowed IACE included
- Step Deadband at 36 mHz
- N-L Droop from 16-36 mHz

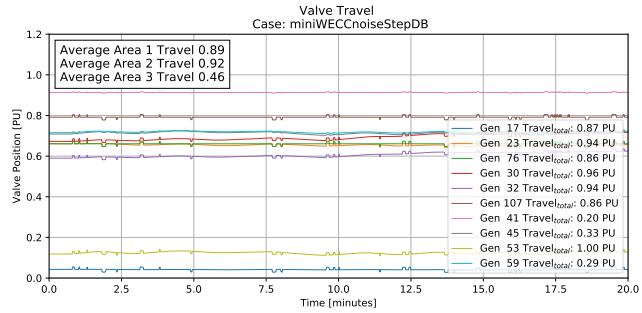
MiniWECC Noise Results

System Loading (0.05% Noise Added):

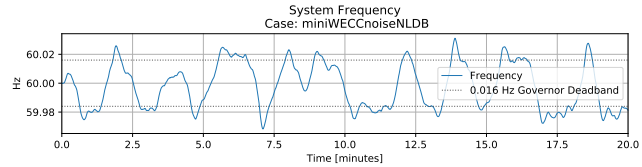


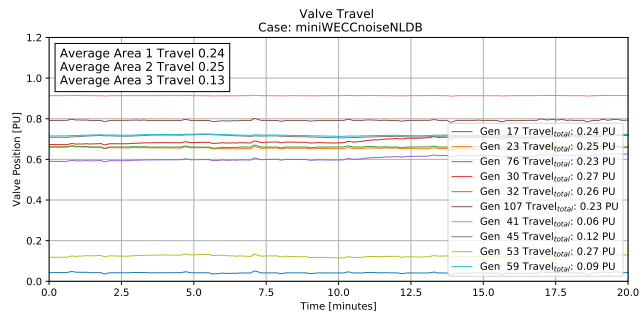
Step DB:





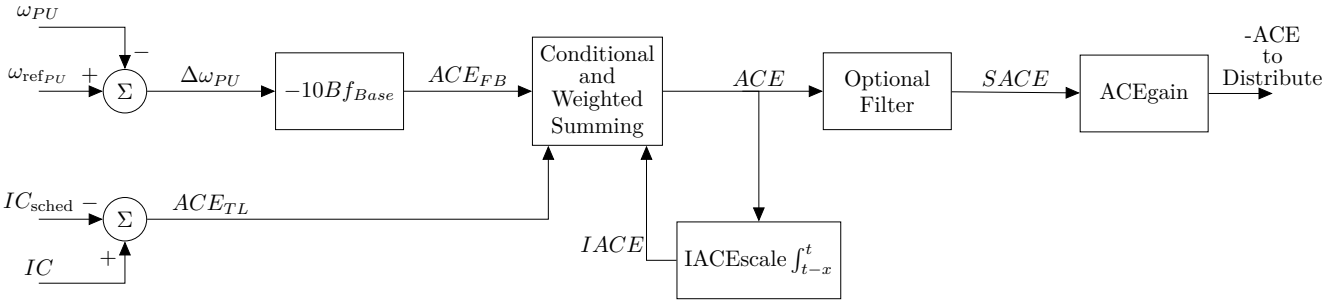
Non-linear Droop DB:



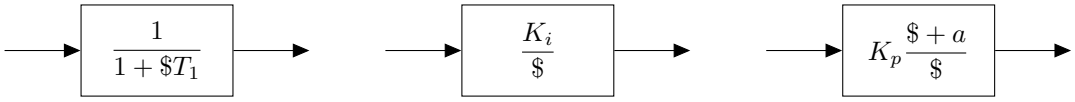


Generator	Valve Travel [PU] Step DB	Valve Travel [PU] N-LD DB	Movement Reduction
17	0.87	0.24	3.63
23	0.94	0.25	3.76
76	0.86	0.23	3.74
30	0.96	0.27	3.56
32	0.94	0.26	3.62
107	0.86	0.23	3.74
41	0.20	0.06	3.33
45	0.33	0.12	2.75
53	1.00	0.27	3.70
59	0.29	0.09	3.22
Total:	7.25	2.02	3.59

AGC Block Diagram

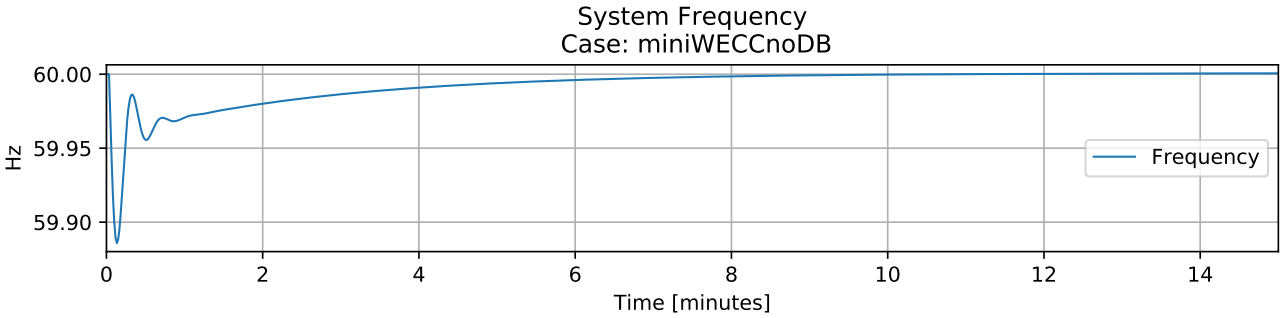


Optional Filters:

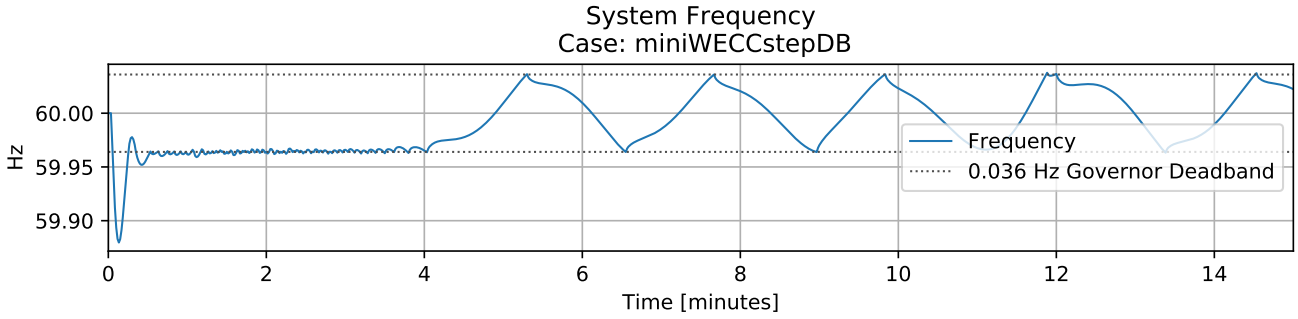


Controller Results (no noise) miniWECC 1500 MW generation loss at t=2

No Deadband:



Step Deadband:



Non-Linear Droop: