

PMNorthAnna3COLPEmails Resource

From: Christopher Cook
Sent: Monday, December 03, 2007 10:49 AM
To: Michael Masnik
Cc: 'Lance Vail'
Subject: Re: Once-Through v Closed Cycle

Mike,

Yep, we sliced the Unit 3 cooling every which way..didn't we. Here are some Forced Evaporation values (forced meaning the evaporation from the towers or from the lake because it was raised above equilibrium temperature). These values are from Section 8.2.1 of the NA EIS:

28 cfs = Once-Thru PPE forced evaporation rate for ESP Unit 3
20 cfs = Hybrid towers proposed in Rev 9 (i.e. 8707 gpm)
So...the once-thru would consume 40% more than the hybrid towers (guess your memory isn't shot!).

Other values you may find useful:

39 cfs = Fully-wet tower PPE max water consumption rate. For some reason, a theoretical max of approx 42 cfs sticks in my mind. This is what it would take if you could magically take all the $9.7E+09$ BTU of heat and only evaporate water with it (i.e., using the latent heat of evaporation).

22 cfs/unit = Once-thru forced evaporation rate for the existing Units 1 & 2 based on long-term averages.

Chris

>>> Michael Masnik 12/3/2007 10:00 AM >>>

Chris, will have to talk to some local gov types tomorrow/Wednesday in Tennessee. Need a rough estimate /rule of thumb. In the North Anna review I know you and Lance looked at consumptive water loss for both closed cycle and once-through. I seem to recall Lance saying that once through lost through evaporation about 40% of the losses from closed cycle. Do I remember correctly? I realize that it is highly site specific but at least at North Anna you did the calculations and came up with an estimate. What I want to get across is that there is a consumptive loss from once through cooling and it is about some percentage of closed-cycle.

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