U.S. EPA Phone Memo

Date: Friday, January 4, 2002
Time: 11:00 am
Return Call From: Ken Daledda, Engineer at Bergen Station, Public Service of N.J.
Phone Number: (201) 313-7718
Phone Call To: Sharon Zaya, EPA
Regarding: Fogging and Icing Problems caused by Cooling Towers (Brayton Point)

On January 4, 2002, I spoke with Ken Daledda to find out if the plume from the Bergen Station cooling system had ever had a fogging or icing impact on the N.J. turnpike, which is located approximately 600-700 feet from the station. Mr. Daledda indicated that the plume has "never had an impact to the surrounding roadways". The following information regarding the Bergen Station was obtained during our phone conversation:

The station, built in 1960, had two gas/oil units using once-through cooling water. In the early 1990's they decided to replace the 2 units with combustion turbine combined cycle units, burning gas (w/oil as backup). At this time, the N.J. Department of Environmental Protection (DEP) required closed cycle cooling because the plant was considered a "new source" and had shown both thermal and entrainment/impingement adverse impacts. The station requested the use of helper towers to cool the discharge of condenser cooling water but the N.J. DEP didn't approve of this option.

The station has since installed two "hybrid" (ie. wet/dry) mechanical draft cooling systems. One has 16 cells for the 750Mw unit and the other has 10 cells for the 550 Mw unit. For the 10 cell system, 6 cells are run wet/dry and 4 cells are wet only. Mr. Daledda indicated that this was a substantial investment. The 10 cell unit with 60% wet/dry capacity cost 300% more or three times the price of a wet only system.

We talked about how they came to installing a hybrid cooling system. Mr. Daledda explained that a SACTI model was run to determine if there were any potential fogging or icing impacts to the interstate. The model projected that there may be a 1 hour impact within a 5 year period. (Note: the towers are less than 700 feet from the roadway). Mr. Daledda said that they didn't believe that the model was accurate and that in their "practical experience, it is not an issue". However, the station mitigated this small risk by installing the wet/dry hybrid system in 1995. I told him that the roadway under consideration in Massachusetts is at least 2000 feet from the proposed towers. He believes that there would only be an impact if a tower were "right next to a roadway". The Bergen Station runs the wet/dry mode in the winter and possibly during humid days in the spring for purely esthetic reasons (there is a visual plume). Note: Of course when a plant uses air for cooling its condenser, the station is much less efficient, therefore producing more air emissions.

Interestingly, the station now receives all of its make-up cooling water from a local POTW as " grey water". They tunneled 100 ft. below the river which separates the two plants. Furthermore, all waste streams from Bergen Station discharge back to the POTW. I told Mr. Daledda that this was a real success story and he agreed saying they were quite proud. He also extended an invitation for an EPA, Boston visit.

Timothy Connor
01/07/02 10:17 AM

To: Mark Stein/R1/USEPA/US@EPA
cc: Sharon Zaya/R1/USEPA/US@EPA
Subject: Re: Brayton Point cooling plumes

Mark and Sharon,

Thank you for the memo and information on Bergen. One note: you may want to mention that the station is not only in close proximity to the parkway, but is also very near (600 meters) to a bridge on the parkway.

I am currently compiling a list of steam plants (mostly large) within close proximity of roadways and select permits that addressed the issue. I will share this information with you as soon as it is complete (early February). One interesting note: the US Capitol Power plant operates a wet cooling system that is approximately 50 meters from the elevated southeast-southwest (i.e., I-95) freeway. The plume, visible from my window right now, drifts all day and night over one of the busiest elevated roads in the city. Although the plant is small (size as yet unconfirmed, but judging from the number of cooling towers and the fact that it is a cogen plant, approximately 100 MW). However, the plume regularly reaches 10 stories and stretches well across six lanes of traffic. We are in the process of trying to arrange a visit with the Architect of the Capitol (a little bit of a dicey proposition with the enhanced security) and determine accident statistics for that stretch of the road.

Also, Mark, we still await confirmation from several of the identified conversion plants in order to finalize the retrofit summaries. We will dispatch these to you as soon as we are confident that the information is correct and relatively complete. In the end, we cut bait with just the four cooling system conversions: Palisades (MI), Canadys (SC), Jefferies (SC), and Pittsburg (CA) #7.

Cheers,
Tim

Mark Stein

Mark Stein
01/07/2002 08:30 AM

To: Sharon Zaya/R1/USEPA/US@EPA
cc: Timothy Connor/DC/USEPA/US@EPA
Subject: Re: Brayton Point cooling plumes

Sharon - Thanks for tracking this down and your excellent memo. I'm forwarding it on to Tim Connor at HQ who is working on the rulemaking in case it would be helpful to HQ as well.

Sharon Zaya

Sharon Zaya
01/04/02 03:50 PM

To: David Webster/R1/USEPA/US@EPA, Mark Stein/R1/USEPA/US@EPA, Damien Houlihan/R1/USEPA/US@EPA, Phil Colarusso/R1/USEPA/US@EPA
cc:
Subject: Brayton Point cooling plumes

Hi guys,
I was able to talk to Ken Daledda at the Bergen Station in New Jersey today. Please find the attached phone memo regarding our discussion.
-Sharon

Daledda phone memo.wp

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