

August 2, 2005

MEMORANDUM TO: Andrew J. Kugler, Section Chief
Environmental Section
License Renewal and Environmental Impacts Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

FROM: Jack Cushing, Senior Project Manager /RA/
Environmental Section
License Renewal and Environmental Impacts Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

SUBJECT: TRIP REPORT - JULY 15, 2005, TOUR OF THE DOSWELL LIMITED
PARTNERSHIP COMBINED CYCLE FACILITY

This report summarizes the tour, by Messrs. Jack Cushing and Goutam Bagchi, of the Doswell Limited Partnership Combined Cycle Facility located in Doswell, Virginia. The purpose of the visit was to tour a plant that uses dry cooling towers in support of the ongoing early site permit (ESP) review for the North Anna ESP site. One of the postulated units in the North Anna ESP application will use dry cooling. The plant is a combined cycle facility and utilizes a gas turbine to produce approximately 450 MWe, and exhaust heat from the gas turbine is directed through boilers which generate steam to power a turbine that produces an additional 250 MWe for a total of 700 MWe. The exhaust steam from the turbine is directed to a large dry cooling tower. The facility does not use cooling water. All plant equipment is air cooled including the pumps and turbines.

The plant is a zero cooling water discharge plant. The dry-cooling towers are A-framed shaped and have large (approximately 36 feet in diameter) slow speed fans. The fans, because they were slow speed, were relatively quiet. The ambient temperature was about 90^E F and the maximum exhaust air temperature was 130° F. We were able to walk underneath the fans which were elevated about 20 feet above the ground. The top of the cooling tower (the A-frame containing the cooling coils) was about 60 feet above ground level. The air flow velocity at ground level (suction side of the fans) was not much more than a mild breeze and noise level was minor. We also walked inside the A-frame for the cooling coils and stood between the fan and cooling coils. The plant personnel were asked if the dry cooling towers had any impacts on birds, and the answer was no. The efficiency of the steam part of the combined cycle plant is not calculated separately from overall plant efficiency.

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P. T. Kuo B. Zalczman B. Sosa J. Cushing
W. Beckner A. Kugler A. Williamson M. Parkhurst, PNNL
G. Imbro K. Manoly RLEP R/F

ADAMS Accession No.: ML

Document name: E:\Filenet\ML052170374.wpd

OFFICE	PM:RLEP	LA:RLEP	SC:RLEP
NAME	J. Cushing	MJenkins	A. Kugler
DATE	8/2/05	8/1/05	8/2/05

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