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THRU: Miller B. Spangler, Chief, Cost-Benefit Analysis Branch, TR

TRIP REPORT REGARDING ALTERNATIVE CLOSED CYCLE COOLING SYSTEMS FOR INDIAN POINT UNIT 2

On June 11, 12, and 13 the following members of the Cost-Benefit Analysis Branch participated in a field trip to the plant site and surrounding areas to review and gather data regarding the environmental, social and economic impacts of alternative closed cycle cooling systems, M. Spangler June 12-13, D. Cleary and R. Thorsen June 11, 12 and 13.

In addition, meetings were held with the Applicant on June 12 to discuss preliminary staff questions regarding the Environmental Report. The following summarize the findings, data and information gained from the trip.

June 11

1. Visited the Westchester County Planning Information Office in White Plains and obtained maps and literature from Robert Reis, Planner, regarding land use, population, road systems, base line economic data, social indicators, and planning goals.

2. Made an aerial reconnaissance of the site and the surrounding areas out to a radius of approximately six miles to observe and photograph land use patterns, population centers, recreation and park facilities, and unique topographical features. The flight also provided some impressions of the extent of the "viewshed" (the surrounding land and water areas from which the various cooling system alternatives can be seen). Photographs were also taken of points of interest, along the Hudson River north of the site such as several marinas and the U.S. Military Academy at West Point, on the return leg of the flight to Dutchess County Airport.

3. A surface reconnaissance was then made, along highway 9W on the west side of the Hudson River to visit historic sites, residential areas and parks which may be visually impacted. The U.S. Military Academy, which is a national historic landmark located approximately 8 miles north of the site was not visited because the U.S.G.S. topographic map of this area shows that the 700' to 800' ridge east of the Bear Mountain Bridge will screen the tallest tower alternatives from view.

   The town of Fort Montgomery and the site of Fort Montgomery, both of which are also listed in the National Register of Historic Places, located about 4 miles from the plant were visited on the tour. It was found that the density of the foliage is such that few, if any, residents or visitors to

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the site will be able to view the natural draft towers during the growing season. Moreover, it is questionable even during winter whether topography might block a view of the cooling tower but possibly not the plume. The Fort Montgomery site is presently undeveloped and has only occasional visitors.

Of the sites visited in Bear Mountain Park the existing plant, stack, and meteorological tower were not visible. However, our visit to the observation tower at the top of Bear Mountain about 4 miles distant from the site indicates that some portion of the top of a natural draft tower may be visible but this needs to be confirmed from topographic map analysis. In addition, the tower plume will probably be visible from various areas within the park. An unobstructed view of the existing plant across the Hudson River was observed from a number of locations on 9W between Jones Point and Tomkins Cove at distances varying from less than one mile to two miles.

At the historic Stony Point Battlefield site about three miles distant, the plant was visible from one developed elevated location. A detailed analysis of the battlefield topography is needed to determine the extent of the developed areas which will be impacted during the winter months.

A natural draft tower will not be visible from the Bear Mountain Bridge but it's plume may be visibile. An intermittent view of the plant facilities was observed from several locations along approximately two miles of highway 6-202 west of Peekskill.

June 12

1. Assembled at 9:00 a.m. at the Indian Point visitor center along with the Environmental Project Manager and personnel from the ESB to discuss the list of preliminary staff questions with representatives of Consolidated Edison and their contractor.

Attendees:

Nuclear Regulatory Commission

M. J. Oestmann, EP
M. Spangler, CBAB
D. Cleary, CBAB
R. Thorsen, CBAB
J. Kline, ESB
G. Gears, ESB
R. Lehr, ESB
R. Kornasiewicz, SAB

Con Edison

L. A. Cohen
J. P. Davis
H. C. Moy
J. D. O'Toole
J. J. Szeligowski
R. W. VanWyck

LeBoeuf, Lamb, Leiby & MacRae

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The morning session was primarily devoted to discussion of the ESB questions concerning drift and noise which will be covered in a separate report. However, a substantial part of the morning session centered on the effort which the Applicant estimates would be required to answer the combined ESB and CBAB questions concerning analysis of two additional alternative cooling systems - circular mechanical draft and fan-assisted natural draft towers. The Applicant stated and our information confirms that only one circular mechanical draft installation is presently in operation in the United States (the Jack Watson Unit 5 plant at Gulfport, Mississippi). The utility is the Mississippi Power Company and the AE services for the plant design were provided by the Southern Services Company. The only fan-assisted natural draft towers presently in operation are located in Germany. However, two towers of this design are planned for Summit 1 & 2. Thus, the Applicant feels that a large amount of independent field work would be required of their staff to develop design and cost data as well as to estimate drift, plume and noise effects in order to provide an analysis at the same level of detail and precision given for the three alternatives considered in the ER. The Applicant stated that perhaps as much as 6 to 12 months would be required to respond to the staff's questions regarding the two additional alternatives and that the schedule for discontinuance of operation of the existing once-through system would be delayed. The Applicant found difficulty also with a staff suggestion that he provide rough estimates involving a range of costs and environmental effects in order to expedite his response, raising questions about the defensibility of approximate estimates not based on detailed engineering design.

The staff agreed to reconsider what modifications, if any, should be made in the ESB and CBAB questions regarding analysis of additional cooling tower alternatives.

2. The early afternoon was devoted to a boat trip about a mile up and down the Hudson River to observe the plant and surrounding environment and assess the potential visual impacts of the cooling system alternatives to boaters and other users of the river. Observations were somewhat hampered by rain and limited visibility.

3. The conference with the Applicant was reconvened at the visitor center at 4:00 p.m. to discuss the CBAB preliminary questions. Those questions and parts of questions 1 through 7 which request analysis of two additional alternatives are subject to the understanding reached during the morning session that detailed engineering design and cost estimates are not expected but rather the Applicant was expected to provide only the best estimates in the time available.

Question 2 The Applicant agreed to provide information regarding the relative reliability and O&M costs for the alternative systems already covered in the ER.

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Question 3 The Applicant expressed difficulty in responding to the request of ESB for estimates on the alternative of constructing noise mitigation measures siting lack of information as to the effectiveness of such measures and the lengthy period for detailed engineering studies to provide suitable estimates. CBAB expressed shared concern for the desirability of such an analysis in view of the aesthetic disamenity of the proposed natural draft cooling tower and the social impact of the noise generated by lower mechanical draft towers.

Questions 4 and 5 The visual impact study and assessment methodology were explained and discussed resulting in a statement by the Applicant that he will review the staff recommended methodology described in a report prepared by the Battelle Pacific Northwest Laboratories[1] and consider other methods.

Questions 7 and 8 It was requested by the Regulatory Staff that the preparation of input data on questions 7 and 8 relating to viewshed determination to topographic maps and photographs from sensitive viewing areas begin immediately since superimposition of the two additional cooling tower alternatives (e.g., the fan-assisted natural draft and circular mechanical draft towers) could be accomplished at a later date. Mr. J. D. O'Toole of Consolidated Edison agreed to start work on these inputs promptly.

June 13

1. Visited the Peekskill Community Development Office to obtain zoning, planning, population and baseline economic information and were introduced to David Ornstein, the Director of this activity. The following are several salient parts of the briefing he provided regarding Peekskill's growth and planning goals.

   The city has an expansive developmental policy which is reflected by its high rank in use of urban renewal funds to clear land in the downtown area, construct parking facilities and plan for restoration of selected blocks of old commercial building facades. It is expected that the Penn Central plans for electrification of the commuter line trackage from Harmon beyond Peekskill will reduce commuting time to 45 minutes and accelerate growth of the area.

[1] Burnham, J. B. et. al., A Technique for Environmental Decision Making Using Quantified Social and Aesthetic Values, BNWL-1787, UC-11, prepared for the U.S. Atomic Energy Commission, February, 1974, pp. 64-147.

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The city has proposed three conceptual design studies regarding fill and development of shallow (3-5 feet deep) areas of the river along it's waterfront. The largest version of these studies would alter as much as 335 acres of the bay. The city presently owns 30 acres of land between the Penn Central Line and the waterfront and also owns 40 acres under the river. The landfill projects under consideration include embayments and peninsulas for the development of recreational, commercial and residential uses. Any plan for development of the bay and the waterfront will require approval by the State and Federal agencies and is expected to be a controversial issue. The city has high hopes for it's waterfront development plans and is concerned that the natural draft towers proposed for Indian Point pose a threat to their success. The visual impact and plume shadow are their main objections. Mr. Orenstein also stated that the residents of the city are opposed to the visual impact, plume shadow and drift effects of the natural draft towers. He expressed a concern that if the salt drift will impact ornamental trees it may also damage peoples lungs.

2. Visited the Buchanan City Clerk's Office and met William J. Burke, one of the past mayors and the present major, George Begany. We requested information regarding population, economic activity, tax structure, land use, zoning, etc. Obtained a transcript of the zoning hearing of January 21 regarding Consolidated Edison's Application for a variance to Buchanan's height limit of 40 feet for construction of the 565 foot high cooling tower. They will also send a transcript of a second hearing on May 6 regarding the same matter. The village hired Professor William Schuster from RPI to advise them regarding drift effects.

   The village has a population of 2,200 and 640 homes. The mayor stated that, although the village does receive taxes from the Indian Point plant, the school district collects the largest share. The Town of Cortlandt also receives taxes from the plant but the City of Peekskill does not. He stated that the EIS for IP-2 and IP-3 overstated the benefits to the community and that the traffic impacts during construction were serious. He advised that although the main concerns of the village are the impacts of drift and increased humidity, they are also concerned with the visual impacts of the tower and plume and the plume shadow. The local medical doctors are concerned that the drift will affect their asthmatic patients. The mayor stated that the local commercial fishermen claim that their catches have increased and that the crabs are larger and more plentiful since the start of operation of the IP-2 once-through system. Con Edison provided the local officials with a trip to Three Mile Island where they heard the complaints of nearby draft towers. Mayor Begany then drove us to the following locations in the village where the existing plant facilities can be seen and photographs were taken:

First & Henry Streets
Cortlandt Avenue
Lindsey Avenue
Tate Avenue & Church Street

3. Drove to Croton Point Park near Harmon about six miles south of the site where the view of the Indian Point plant was obscured due to haze, although it was a sunny day. However, park personnel stated that the IP transmission line towers and the west bank up to Jones Point can be seen from there on most of the days of the year.

4. Visited the historic site of Van Cortlandt Manor and found that the cooling tower will not be visible from that location.

Original signed by
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