DOCKET NO. 54A - Request for amendment to the Certificate of Environmental Compatibility and Public Need issued by the Connecticut Siting Council in Docket No. 54 to O'Brien Energy Systems, Inc.	:	Connecticut Siting Council
	:	February 5, 1988

OPINION

O'Brien Energy Systems, Inc., (O'Brien), applied to the Connecticut Siting Council (Council) on November 6, 1987, for an amendment to the Certificate of Environmental Compatibility and Public Need (Certificate) which the Council issued on February 19, 1986, for the construction, operation, and maintenance of a cogeneration facility located at the Hartford Steam Company Plant in Hartford, Connecticut. The amendment would permit O'Brien to extend the term of the Certificate from June 30, 1989, to December 1, 1991, replace two approved 63.5-foot emission stacks with a single, approximately 195-foot emission stack, and construct boiler ducts running horizontally to the stack and approximately 10 feet above the roofline of the building.

The Council considered the public need and environmental compatibility of the facility's proposed modifications, including the effects on the district heating and cooling system in Hartford, changes in fuel and water use, effects on emissions relative to recent changes in federal and state air quality standards, and visibility of the proposed emissions stacks as contrasted against the city's skyline.

The federal and state permitting process delayed the final design and construction of the previously approved facility and emission stacks as submitted. Forecasts of steam demand for heating and cooling uses in the Hartford area indicate that Hartford Steam Company would need larger boilers in order to produce the steam necessary to meet this demand. The resultant larger boilers might use more fuel and cooling water and therefore would produce higher emission levels. The larger boilers would also need an improved exhaust system, thereby necessitating the proposed larger ducts on the roof connecting the boilers to the emissions stack.

Increases in water use from the city's water supply would be adequately provided by the Metropolitan District Commission. Any increase in non-contact cooling water would be insignificant and discharges into the Park River would still comply with federal water quality requirements.

Recently adopted federal and state environmental air quality standards for maximum stack concentrations of sulfuric acid, indicated that the air quality modeling for the original cogeneration plant had produced results which were inadequate to ensure compliance with the new emission regulations. The facility would be subject to a Prevention of Significant Deterioration (PSD) evaluation for sulfur dioxide (SO2), and particulate matter increments. Current modeling indicated that even without an increase in steam capacity, an

increase in stack height would be necessary. To ensure compliance, the new combustion units in the proposed revised facility, would need to combine fuels of lower sulfur content with a taller emissions stack, one minimally 187 feet high.

By using natural gas as the primary fuel and 0.3% sulfur content No. 2 oil as the secondary or backup fuel, emissions of SO2, nitrogen oxide (NOx), and particulates would be kept below the maximum allowable stack concentrations at this height. The applicant selected an approximately 195-foot stack height to allow flexibility in the final design.

An area of Council concern centered on the stack emission's dispersion pattern. The approved facility's stack emissions would be affected by recent and planned construction of tall buildings in the Hartford area. The plume would be subject to aerodynamic downwash which would create an air movement cavity surrounding the area of the facility. This cavity would inhibit the shorter stacks from properly dispersing the stack emissions. To effectively disperse the emissions from this downwash cavity, the approximately 195-foot stack would be needed.

Another item of interest to the Council, focused upon the visual impact the proposed approximately 195-foot stack would present when contrasted against the general background created by the city's tallest buildings. The stack would be visible from some city streets, portions of Interstate 91, and the

Wilbur Cross Parkway, particularly when viewed from the south, and from across the Connecticut River. From the north and northwest, the stack would be screened by existing and planned buildings. Portions of the stack would be observable from several of Hartford's office buildings. Visibility would be increased by the presence of safety lights and the painting configuration, particularly if painted in alternating red and white bands. This color scheme may be required by the Federal Aeronautics Administration. The Council is confident that the color scheme, lighting, and appearance of the proposed facility could be integrated into the cityscape of Hartford without a significant impact on the physical appearance of the city.

The project in its revised configuration would provide additional heating and cooling capability, at relatively low cost, to Hartford's projected growth without any sacrifice to electricity generation or contribution to air quality deterioration.

The Council is assured that the proposed changes have been designed and would be constructed to comply with all necessary standards and codes relative to safety and air quality. The Council is confident that the proposed modified facility would operate as a state-of-the-art facility using the best available control technology.

The Council finds that the need for the proposed changes outweighs the environmental impacts associated with the operation of the facility. The Council therefore directs that the amendment to the certificate be issued subject to the conditions of the Decision and Order that accompanies this Opinion.

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