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November 30, 1983

W3P83-3923  
3-A1.01.04

Director of Nuclear Reactor Regulation  
Attention: Mr. G.W. Knighton, Chief  
Licensing Branch No. 3  
Division of Licensing  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

SUBJECT: Waterford 3 SES  
Docket No. 50-382  
Process Steam Line from Waterford 1 & 2

Dear Mr. Knighton:

The purpose of this letter is to inform the NRC Staff of proposed construction activities in the general vicinity of the Waterford 3 Nuclear Power plant. While LP&L has concluded that these activities do not constitute a hazard to the Waterford 3 Plant, your review and concurrence is desired before finalizing construction plans.

LP&L is proposing to construct a 24 inch steam line which would carry steam from Waterford Units 1 and 2 to the Union Carbide plant. This line will not pass in the immediate vicinity of the Waterford 3 Plant. Its closest approach to the plant occurs directly South East of the plant where the line runs parallel (and to the south-side) of the existing railroad track.

The preliminary design for this line utilizes schedule 40 carbon steel and would be expected to operate at a pressure of 650 psig or less and a temperature of 800°F. The line where it would come closest to the plant, runs about 100 ft. from the centerline of the railroad track and follows the track at that distance until essentially reaching the Union Carbide plant.

The design is based upon the line being erected on supports spaced approximately every 40 ft. which would suspend it 4 feet above the ground. We have thoroughly investigated possible hazards that this line could pose to the operation of Waterford 3, and have concluded that it would present no hazard over and above those already analyzed in section 2.2.3 of the Waterford 3 FSAR.

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Summarized herein are the possible hazards that have been considered:

- a) jet impingement or pipe whipping and/or thermal effects on overhead transmission lines connecting Waterford 3 with the switchyards and to the outside grid.
- b) jet impingement or whipping of the line in the direction of oncoming trains which could be postulated to carry hazardous material.
- c) jet impingement or whipping of pipe in the downward direction, accompanied by cratering and possible damage to other hazardous buried pipelines.
- d) direct effects on the plant from missiles resulting from ruptures in the line.

Our conclusions from the analysis were as follows:

- a) the region of influence of the jet from even the worst postulated break (a slot break oriented so that the escaping steam is directed toward the overhead wires) falls short of the overhead wires so that both mechanical and thermal effects are negligible.
- b) pipe whip is also insufficient to reach the overhead lines.
- c) jet impingement is insufficient to affect any passing trains.
- d) the distance between supports of the pipe is such that the pipe would hinge about the support, even if the latter were to eventually fail, and hence the maximum credible distance the pipe would whip is less than 40 ft. Thus it is highly unlikely that the line, as located, could have an effect on passing railroad traffic. In any event, the maximum potential railroad accidents resulting from a pipe whip event would not exceed those previously analyzed and found to pose no unacceptable hazard to the plant.
- e) cratering effects could cause damage to the 10" LP&L pipeline which crosses under the proposed steam line. However, this line, which normally carries natural gas, is located at a sufficient distance from the Waterford 3 plant, so that its rupture would pose no hazard. Rupture of this line was considered in preparation of section 2.2.3 of the FSAR, but

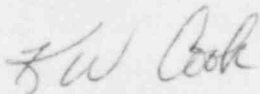
Page 3  
W3P83-3923  
3-A1.01.04

analysis results were not reported since other natural gas lines of larger diameter and closer proximity to the plant were assessed to potentially pose more severe hazards to the plant. Analyses of these other lines showed that they presented no hazard.

Both LP&L and Union Carbide have delayed a final agreement on the proposed steam line pending assurance that a potential licensing issue on Waterford 3 does not exist. Since extensive delays could jeopardize conclusion of this agreement, we would appreciate obtaining your concurrence, as soon as possible, that the proposed line does in fact present no undue hazard to the plant.

If you need any further information, do not hesitate to contact me or Mr. Roy Prados (504) 363-8922.

Yours very truly,



K. W. Cook  
Nuclear Support & Licensing Manager

KWC/RWP/ch

cc: Messrs. E.L. Blake, W.M. Stevenson, J. Wilson, G.L. Constable, K.M. Campe