



B&W FUEL COMPANY

An American Company with Worldwide Resources

70 1201
BW

P.O. Box 11846
Lynchburg, VA 24506-1646
Telephone: 804-522-6000

March 21, 1994

Robert C. Pierson, Chief
Licensing Branch
Division of Fuel Cycle Safety and Safeguards, NMSS
United States Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Pierson:

REFERENCE: Docket No. 70-1201, SNM-1168

On November 9, 1993, B&W Fuel Company's (BWFC) Commercial Nuclear Fuel Plant (CNFP) submitted an evaluation of its new ventilation system using USNRC Regulatory Guides 3.34 and 3.35 to demonstrate that the maximum dose to a member of the public offsite due to a release of radioactive materials from the CNFP did not exceed 1 rem effective dose equivalent. We requested that the requirement for an Emergency Plan for NRC approval be exempt. Mike Lamastra of your staff requested additional information concerning our request, correspondence dated March 2, 1994. Our response to his request is included as Attachment 1.

Page 8-1 has revised to include the supplemental information. If you should require any additional information concerning this matter, please feel free to contact me at (804) 386-5202.

Sincerely,

B&W FUEL COMPANY
Commercial Nuclear Fuel Plant

Kathryn S. Knapp

Kathryn S. Knapp, Manager,
Safety and Licensing

cc: NRC Region II
101 Marietta St. N. W.
Atlanta, GA 30323

9403290037 940321
PDR ADOCK 07001201
C PDR

NF12'

ATTACHMENT 1

REQUEST FOR ADDITIONAL INFORMATION
APPLICATION DATED NOVEMBER 9, 1993
B&W FUEL COMPANY
DOCKET 70-1201

- | <u>Page</u> | <u>Comment</u> |
|-------------|---|
| A-1 | <p>Reference 5, the B&W Environmental Report, was prepared in 1974, but in evaluating the meteorology and atmospheric dispersion, more recent data is available, including data from the meteorology facility at the Lynchburg Technology Center and the Mt. Athos site. Why was the more recent data not used?</p> <p>RESPONSE: Although B&W's 1974 Environmental report was used as a reference, the calculations did not include the 1994 data but rather the model provided in the Reg. Guide. Both Reg. Guide 3.34 and 3.35 allow for the atmospheric diffusion to be calculated without having local meteorology data available. In reviewing meteorology data available for 1993 from the Lynchburg Technology Center (LTC), the average wind speed was recorded at 1.8 m/s. With the nearest resident living ENE from the stack, the worst case scenario would be if the wind was coming from the WSW. Data revealed that this wind direction occurred at low frequencies (4%) and averaged 2.9 m/s. With this, using the wind speed of 1 m/s allotted for in the Reg. Guide is a more conservative estimate. No changes were made.</p> |
| A-5 | <p>The site is situated in a depression with the top of the stack below the surrounding terrain to the south and the east of the plant. How has this been considered in assessing the dispersion?</p> <p>RESPONSE: CNFP is located in a depression in respect to the terrain to the south and the east of the plant. Since the actual residents are located to the ENE of the plant and this area is at a lower elevation in respect to the site, the topography was not included in the dispersion calculation. The area residency has not changed in the past 20 years and it is highly unlikely that in the future there would be inhabitants in either the south or the east direction. Topography will be assessed at that time.</p> |
| A-6 | <p>The locations of the "nearest resident" (at 800 meters) and the "nearest receptor" (at 1000 meters) are provided in the 1974 report. During the past 20 years, these locations may have changed (moved closer). Have the locations of the nearest receptor and nearest resident of the nearest receptor and nearest resident been reassessed?</p> <p>RESPONSE: The nearest resident has not changed in the past 20 years. The nearest receptor is not an actual resident. It merely defines the location of where the highest exposure would occur (maximum X/Q) i.e., in the event of the criticality accident modeled in our calculations, the highest exposure would</p> |

occur 1000 meters from the stack in the prevailing wind direction at the time of the incident. No changes were made.

A-7 The stack height is 21 meters but the building height, though not specified, is estimated to be at least 10 meters. They are close enough that building wake effects should have been evaluated, but the dose calculations do not reflect the wake. Please re-do the calculations accordingly.

RESPONSE: Reg. Guide 3.35, page 6, paragraph 4. a. footnote 6, states "Credit for an elevated release should be given only if the point of release is (1) more than two and one-half times the height of any structures close enough to affect the dispersion of the plume." The stack height is 21 meters and the building height is 8 meters. The point of release is more than two and one-half the height of the building. Consequently, offsite doses would not increase due to the wake effect of the building. No changes were made.

A-9 It appears that the iodine concentrations were not properly evaluated. While the second footnote under Table IV states that "an iodine reduction factor (25%)" was used, Section C.2.a of Reg. Guide 3.35 indicates that in calculating a source term, 25% of the iodine should be assumed to be released directly to the room. Section 3.2.d of Reg. Guide 3.35 also indicates that there is no iodine depletion allowance. Please clarify how the iodine concentrations were evaluated and confirm that they were determined in accordance with the procedure outlines in Reg. Guide 3.35.

RESPONSE: The iodine concentrations were calculated in accordance with Reg. Guide 3.35. Listed as assumption # 1 on page A-4, it states "It will be assumed that all of the noble gas fission products and 25% of the iodine radionuclides resulting from the criticality accident are released directly to a ventilated room atmosphere." The footnote on page A-9 was intended to reflect this assumption. The terminology "reduction factor" may have been confusing. To reiterate, the calculation assumed that 25% of the iodine radionuclides were considered to be released to the ventilated room atmosphere and exhausted out the stack.

A-15 Step 2 - is the PLR area or volume intended?

RESPONSE: The word "area" was a typo. Volume is the correct term.

8.0 RADIOLOGICAL CONTINGENCY PLAN

An evaluation has been performed to demonstrate that the maximum dose to a member of the public offsite due to a release of radioactive materials from the CNFP does not exceed 1 rem effective dose equivalent. With the evaluation, in accordance with the provisions of 10 CFR 70.22(i)(1)(i), BWFC is not required to maintain an NRC approved Emergency Plan. An emergency plan and implementing procedures for internal use to include an emergency response organization shall be maintained.

If process changes or modifications to the ventilation system occur that could effect the offsite dose projection, CNFP shall verify that the evaluation submitted to the Commission on November 9, 1993 and supplemented on March 21, 1994 is still valid and that the dose does not exceed criteria of 10 CFR 70.22.