



# United States Department of the Interior

GEOLOGICAL SURVEY  
RESTON, VIRGINIA 22092

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In Reply Refer To:  
EGS-ER-78/932  
Mail Stop 760

23 OCT 1978

Mr. Ronald L. Ballard  
Chief, Environmental Projects Branch 1  
Division of Site Safety and  
Environmental Analysis  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Mr. Ballard:

We are providing the following technical assistance regarding sites for units 1 and 2 of a nuclear power plant at Charlestown, Washington County, Rhode Island, as requested in your letter of September 25.

The General Services Administration's draft environmental statement for disposition of the Naval auxiliary landing field at Charlestown contained a brief reference to "the impact from a postulated fault in the bedrock beneath the site and its implications for the structural design of the power plant buildings" (p. III-88, par. 3). The postulated fault was elsewhere described as a northeast-trending lineament evident on magnetometer and scintillometer surveys (p. I-5 to I-6). The alternative interpretation that the lineament may represent a non-faulted bedrock contact was also presented (p. I-6, par. 1). Chapter III of the draft statement contained the suggestion of a potential adverse environmental impact from the postulated fault. This possibility should be clarified in any future environmental statement for the project by the Nuclear Regulatory Commission. It would be advisable to include in such a statement a summary of the evidence that a fault exists and a discussion of the probability that a fault at the site is active.

Charlestown site: Examination of available ground-water data for the site shown on figure 2.1-16 indicates that effects of normal operation should be minimal. Future environmental analyses should, however, consider construction effects--especially effects of dewatering or spills of chemicals, fuels, and oils--and possible effects on ground water of

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accidental nuclear releases. Because about three-fourths of the residents of the area obtain their water supplies from privately owned wells and from three privately owned water-supply systems and also because the NALF base system depends upon the ground water, the local importance of ground water is apparent.

Rome Point site: The normal operation of the proposed plant should not result in significant adverse impacts on ground water; however, analysis of construction effects and effects of nuclear accidents should be included. Water-table contours should be developed in order to determine hydraulic gradients in the area.

Westerly site: An inventory of wells and springs and of ground-water users should be included in an environmental statement. Water-table contours and water-bearing properties would be essential to impact evaluation.

Bear Swamp site: An inventory of wells and springs and of ground-water users should be included. Water-table contours and water-bearing properties would be needed for impact evaluation. The configuration of sheeting joints at and near the plant site and their probable effects on the direction and rate of movement of any contaminants escaping from the plant should be evaluated.

Gill site: Dewatering effects should be evaluated because of the high water-table conditions. Water-table contours and water-bearing properties are needed to permit impact evaluation. An inventory of wells, springs, and ground-water use would be needed. Records of seasonal water-table fluctuations may be significant.

Erving site: The degree of mitigation from sorption phenomena should be evaluated because of the shallow bedrock conditions. Rock joint trends and characteristics of joints should be described. Water-table gradients would be needed, as well as an inventory of wells, springs, and ground-water use. Because there is apparently little cover of soil and unconsolidated materials, special consideration should be given to the possible relatively fast travel of contaminants through open fractures.

Comerford site: Water-table contours and an inventory of wells, springs, and ground-water use would be needed. Delineation in and near the plant reservation of the suspected pre-glacial buried Connecticut River channel would be essential to the assessment of possible impacts from the accidental release of pollutants.

Moore Reservoir site: Evaluation of accident effects on ground water and through ground water to the reservoir would require water-table contours and water-bearing properties of the materials between the plant and the reservoir.

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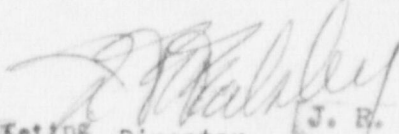
Errol site: The water-table configuration should be given and at least representative water-bearing properties of the glacial till and metamorphics should be provided. An inventory of wells, springs, and groundwater users would be advisable.

For more detailed information, the New England District Office of the Water Resources Division of the U.S. Geological Survey might be contacted. The address is as follows:

U.S. Geological Survey  
Water Resources Division  
150 Causeway Street, Suite 1001  
Boston, MA 02114  
FTS 223-2822

Thank you for the opportunity to comment.

Sincerely yours,

  
Acting Director J. R. Balsley

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