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Senior Vice President

May 28, 1980



Docket No. 50-364

Director of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attn: Mr. A. Schwencer

JOSEPH M. FARLEY NUCLEAR PLANT - UNIT NO. 2
RESPONSE TO QUESTIONS RELATED TO EXECUTIVE ORDER 11988
FLOODPLAIN MANAGEMENT

Gentlemen:

Alabama Power Company submits the enclosed additional information requested by the Hydraulic Engineering Branch regarding questions related to Executive Order 11988 - Floodplain Management.

Should you have questions, please advise.

Yours very truly,

F. L. Clayton, Jr.

FLCJr/TNE:aw

Enclosure

cc: Mr. R. A. Thomas, w/o Enclosure
Mr. G. F. Trowbridge, w/o Enclosure
Mr. L. Kintner, w/Enclosure

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ENCLOSURE

RESPONSE TO
HYDROLOGIC ENGINEERING GENERIC QUESTIONS
RELATING TO EXECUTIVE ORDER 11988 FLOODPLAIN MANAGEMENT
FOR PLANTS NEAR COMPLETION

QUESTION 1:

Provide descriptions of the floodplains of all water bodies, including intermittent water courses; within or adjacent to the site. On a suitable scale map provide delineations of those areas that will be flooded during the one-percent chance flood in the absence of plant effects (i.e., pre-construction floodplain).

Response:

Joseph M. Farley Nuclear Power Plant is located on the west bank of the Chattahoochee River at River Mile 44.3 and about 15 air miles east of Dothan, Alabama. The plant yard grade is at El. 154.5 feet MSL. One small stream flows across the northern part of the plant boundary while another wet weather stream crosses the southeastern part as shown on attached FSAR Figure 2.4-1. An emergency cooling pond as shown on attached FSAR Figure 2.4-61 with hatched area, is located to the southwest of the plant.

The Chattahoochee River in the vicinity of the plant site is about 300 feet wide and is maintained about 12 feet deep for navigation purposes. There are 13 dams and locks upstream of the plant site and one dam downstream of the plant site. The area which would have been flooded by a 100-year flood before plant construction is shaded on attached FSAR Figures 2.4-1 and 2.4-61. The plant construction has minimum or no effect on pre-construction flood plain characteristics in the vicinity. A nominal number of drainage changes have been made, incidental to site grading, all to improve safety and drainage of the plant area.

QUESTION 2:

Provide details of the methods used to determine the floodplains in response to 1. above. Include your assumptions of and bases for the pertinent parameters used in the computation of the one-percent flood flow and water elevation. If studies approved by Flood Insurance Administration (FIA), Housing and Urban Development (HUD) or the Corps of Engineers are available for the site or adjoining area, the details of analyses need not be supplied. You can instead provide the reports from which you obtained the floodplain information.

Response:

The Corps of Engineers' Mobile district has provided the river water surface profile data for the 100-year flood (profile attached). In the vicinity of the plant, i.e., River Mile 44.3, the 100-year flood elevation is 119.5 feet MSL per the water surface profile provided by the Corps of Engineers. The 119.5 feet MSL contour line is traced on attached FSAR Figures 2.4-1 and 2.4-61 to delineate the flooded area.

QUESTION 3:

Identify, locate on a map and describe all structures and topographic alterations in the floodplains.

Response:

There are no structures in the flood plains which affect or alter the characteristics of the flood plain within the boundary of the property line or downstream. The river intake structure is flood protected to El. 127 feet MSL which is about 3 feet above the flood of record. All other structures and equipment necessary for maintaining long-term safe conditions are located above or protected to the plant grade level of 154.5 feet MSL (refer to FSAR Section 2.4.2.2).

QUESTION 4:

Discuss the hydrologic effects of all items identified in 3. above. Discuss the potential for altered flood flows and levels, both upstream and downstream. Include the potential effect of debris accumulating on the plant structures. Additionally, discuss the effects of debris generated from the site on downstream facilities.

Response:

Since there are no structures within the flood plains the hydrologic effects which might alter the flood flows and flood level are minimal. The cooling pond dam and dikes are very conservatively designed. In the unlikely and highly improbable event that some failure should occur, the cooling pond dikes are located so that the resulting discharge of water would not be directed into the plant area. The maximum possible resulting surge wave coincident with even the highest possible water elevation on the flood plain would not adversely affect the plant area. Should such failure occur under 100-year flood stages, debris could be carried down the natural drain and deposited in the river about 1/2 mile downstream. This might result in a damming effect with slight increase in upstream flood level but will not endanger plant operation in any way (refer to FSAR Section 2.4.10).

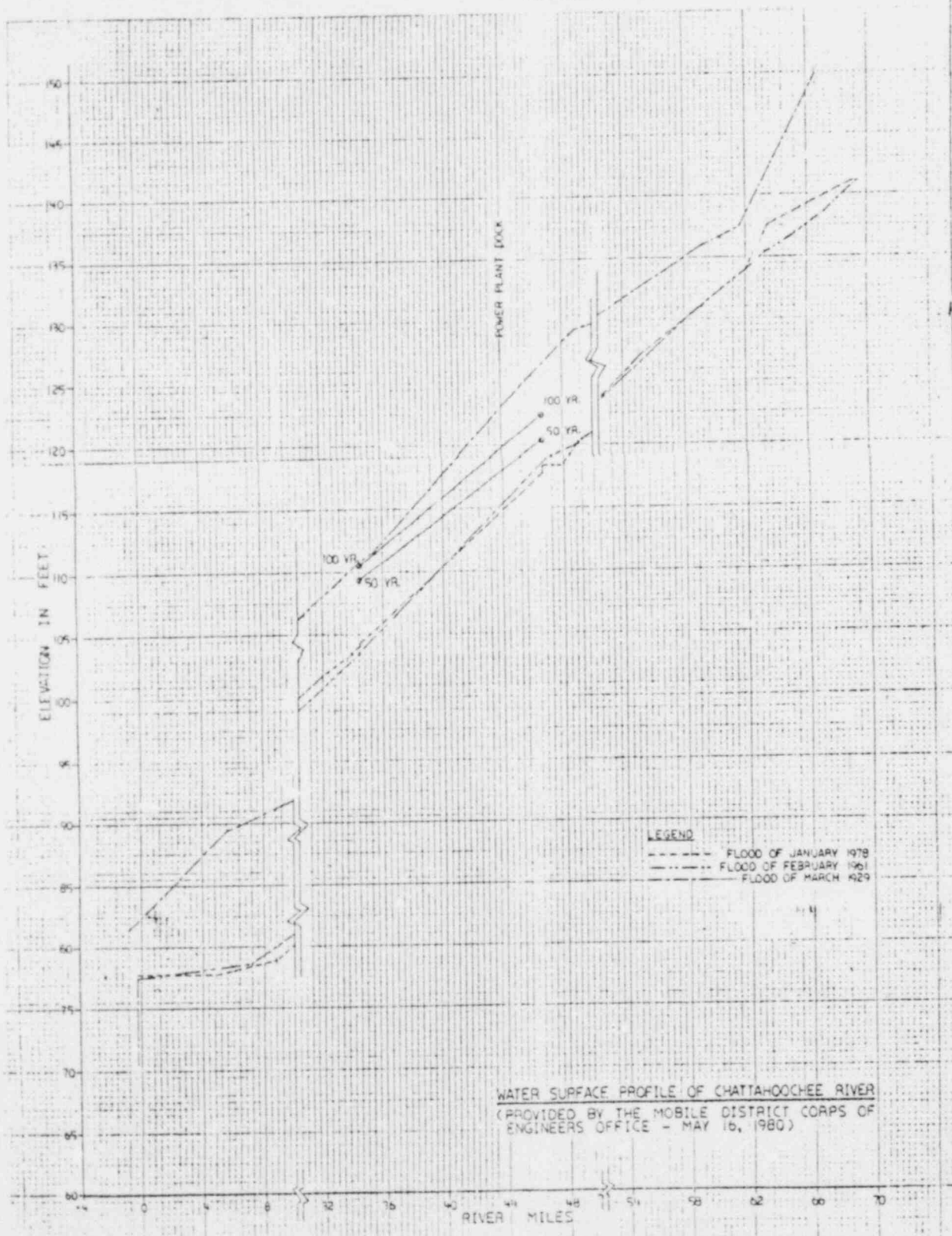
According to a recent study entitled "Walter F. George Dam Break Study" completed by the Corps of Engineers, Mobile District, the maximum water stage in the vicinity of the plant is less than 130.5 feet MSL, while the elevation of the plant yard grade and the elevation of other safety-related equipment is at or above 154.5 feet MSL. No radioactive waste material will be stored within the flood stages of the probable maximum flood to avoid endangering the downstream facilities and their users.

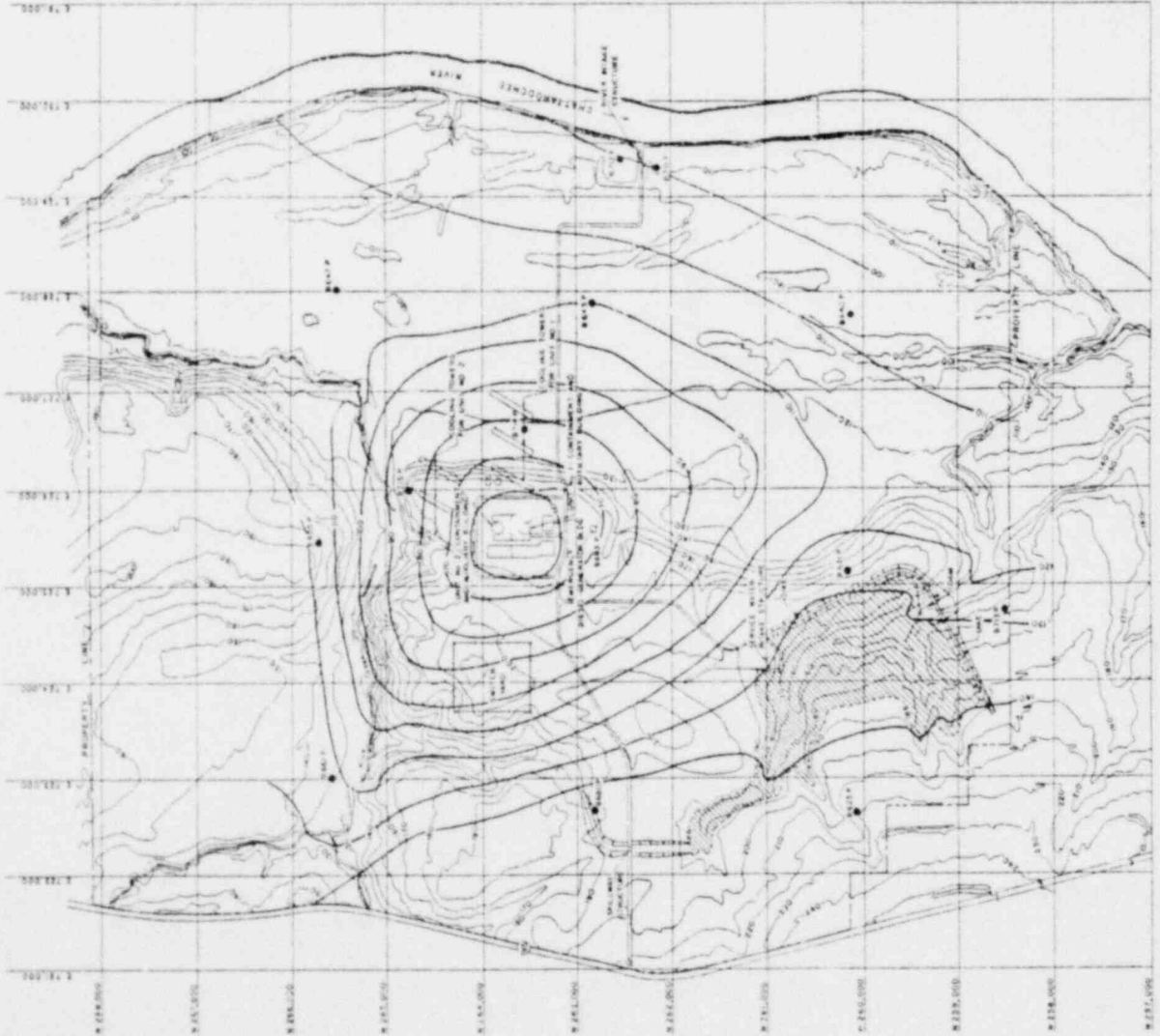
QUESTION 5:

Provide the details of your analysis used in response to 4. above.
The level of detail is similar to that identified in item 2. above.

Response:

As discussed in the response to Question 2, the delineation of the flood plain areas is based on flood elevations furnished by the Corps of Engineers, Mobile District. The remaining information was extracted from Farley Nuclear Plant FSAR Section 2.4.





LEGEND

- PRELIMINARY LOCATION
- DETERMINED LOCATION

NOTE

1. ELEVATION, STRUCTURE, CONTAINMENT AND BUILDING BUILDINGS EXISTENCE IN ALL LEVELS OF BUILDING, OVER AREA OF THE PLANT, AND THE LOCATION OF WATER PUMP STATIONS AND SPILLAGE STATION.

2. DATA COLLECTED FROM 17 JUL 1978.

3. SOURCE: M.S. 1.

ALABAMA POWER COMPANY
JOSEPH M. FARLEY NUCLEAR PLANT
FINAL SAFETY ANALYSIS REPORT

P-1(b) AND P-2
UNCONFINED WATER LEVELS
FIGURE 2.4-61