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MEMORANDUM FOR: S. Koblusok, Environmental Project Engineer
 Environmental Projects Branch, DSE

FROM: Terry L. Johnson, Acting Section Leader
 Hydrologic Engineering Section, DSE

RE: William S. Bivins, Asst. Chief
 Hydrology-Meteorology Branch, DSE

SUBJECT: WPPSS-2 PROPOSED WASTE TREATMENT FACILITY, HYDROLOGIC
 ENGINEERING QUESTIONS

Enclosed are hydrologic engineering questions for the subject waste treatment facility, prepared by T. L. Johnson. These questions are necessitated by a lack of information regarding the design basis for seepage and flooding.

Note that the enclosed generic questions regarding floodplains are applicable to both the treatment facilities and other plant structures. In order for us to complete our normal environmental review for the nuclear plant, responses to these questions will be required. Thus, we recommend that the applicants respond to all questions as soon as possible.

Original Signed by
 Terry L. Johnson

Terry L. Johnson, Acting Section Leader
 Hydrologic Engineering Section
 Hydrology-Meteorology Branch, DSE

Enclosure:
 As Stated

cc: D. Kallier
 B. Kropfer
 W. Bivins
 T. Johnson

OFFICE	DSE:HMB	DSE:HMB				
SURNAME	TLJohnson/Ts	WSBivins				
DATE	02/27/80	02/ /80				

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HYDROLOGIC ENGINEERING QUESTION
WPPSS-2 SEWAGE TREATMENT FACILITY

1. Primary Lagoon.

Provide additional information regarding the liner that will be used to prevent seepage from the primary lagoon. This information should include liner permeability, liner strength and durability construction techniques, and bases for the values reported.

2. Secondary Lagoon.

Provide the basis for your estimate of $\frac{1}{4}$ inch per day of seepage from the secondary lagoon. Discuss the treatment of the lagoon sides and bottom that will be used to achieve this seepage limit.

Document that buildup of salts and other solids on the bottom of the secondary lagoon will not adversely affect the quality or quantity of the seepage from this pond.

3. Overflow Lagoon.

Document the design bases for overflow into the third lagoon due to intense rainfall. Discuss the frequency of rainfall that will be contained and the methods of computation of the required storage volume.

4. All three ponds.

Provide responses to the following generic questions.

Definition (from Executive Order 11988 Floodplain Management)

Floodplain: The lowland and relatively flat areas adjoining inland and coastal waters including floodprone areas of offshore islands, including at a minimum that area subject to a one percent or greater chance of flooding in any given year.

- a. 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).
- b. Provide details of the methods used to determine the floodplains in response to a. 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 and 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.
- c. Identify, locate on a map, and describe all structures, construction activities and topographic alterations in the floodplains. Indicate the status of each such structure, construction activity and topographic alteration (in terms of start and completion dates) and work presently completed.

- d. Discuss the hydrologic effects of all items identified in c. 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.
- e. Provide the details of your analysis used in response to d. above. The level of detail is similar to that identified in item b. above.
- f. Identify non-floodplain alternatives for each of the items (structures, construction activities and topographic alternatives) identified in e. above. Alternately, justify why a specific item must be in the floodplain.
- g. For each item in f. above that cannot be justified as having to be in the floodplain either show that all non-floodplain alternatives are not practicable or commit to re-locating the structure, construction activity or topographic alteration out of the floodplain.