

29 June 1994

R G Johnson, LP 2G-C

KINGSTON FOSSIL PLANT - COAL YARD RAINFALL RUNOFF STUDY

As a result of recently imposed budgetary restraints on future F&HP capital expenditures a thorough review of the proposed conceptual design for the subject project has been conducted and two meetings have been held to discuss alternative measures. It now appears that the design described in the conceptual design package can be modified somewhat in order to cut costs. The previously transmitted design package should be revised to reflect the following design premises:

- a. Pumps and sump constructed of materials tolerant of runoffs having a pH of 3.2 to 3.8. (Materials specified in previous design package were selected to resist a pH of 2.4.)
- b. Three alternative pump and pipeline configurations:
 1. One pump and one discharge pipeline to ash pond.
 2. Two pumps and one discharge pipeline to ash pond.
 3. Two pumps and two discharge pipelines to ash pond.

Information listed in the revised design package should be in a format that will allow separate cost estimates to be prepared for each of the above three configurations (Alternatives 1, 2 and 3). (Only Alternative 3 would have been estimated using the previous design package as basis.)

State and federal regulations do not dictate a definite period of time in which a system of pumps and collection areas must be capable of handling a 10-year, 24-hour rainfall event after an event of slightly lesser magnitude or after several days of continual rainfall. At the last meeting it was agreed that historical rainfall data for the Kingston Plant region would be analyzed for frequency of events of large magnitude. The results of this analysis would then be used to approximate the frequency that runoff would likely overflow the basin in the future for each of the above three pump/pipeline configurations.

The revised design package should include a recommendation for one of the three alternative configurations based on results of the analysis of past rainfall data. It should show study results in a format that can be easily interpreted by plant management and others having project approval authority. Calculated data should be tabulated or graphed and should include at least the following items:

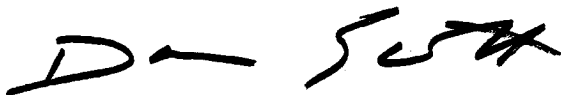
- a. Intervals between past rainfall events. Time intervals of short duration between those rainfall events that

exceeded or approached the magnitude of a 10-year, 24-hour event (approximately 4.8 inches) for the Kingston Plant region.

- b. Pumping durations for 10-year event only. Time required to pump a volume of rainfall runoff equivalent to an amount falling on the coal pile area during a 10-year, 24-hour event for the following pump/pipeline configurations:
 1. One pump and one discharge pipeline to ash pond.
 2. Two pumps and one discharge pipeline to ash pond.
 3. Two pumps and two discharge pipelines to ash pond.
- c. Pumping durations for runoff basin volume only. Time required to pump a volume of rainfall runoff equivalent to the volume of coal pile runoff basin contained between those elevations at which the first pump starts and the basin overflows.
- d. Rainfall volume. The volume of rain that falls on the coal pile drainage area during a 10-year, 24-hour event.
- e. Working volume of coal pile runoff basin. The volume of coal pile runoff basin contained between those elevations at which the first pump starts and the basin overflows.
- f. Pumping volumes. The volume of runoff that would be pumped during a 24-hour period for the following pump/pipeline configurations:
 1. One pump and one discharge pipeline to ash pond.
 2. Two pumps and one discharge pipeline to ash pond.
Two pumps operating.
 3. Two pumps and two discharge pipelines to ash pond.
Two pumps operating.

Remaining work performed during this study should be charged to the same activity numbers as used in the past. The revised design package should be available to Cost Estimating by August 1 in order to support preparation of a PAB package for the September PAB meeting.

If you have any questions please call me at 4446 or Chuck Bohac at 7319.



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DWS

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