

**INTEROFFICE CORRESPONDENCE**

DATE: April 16, 1993

TO: C. A. Bicher, Environmental Design Engineering, Building 030

FROM: J. A. Ledford, Solar Ponds Remediation Technical Support, Building 080, x8673 JAL

SUBJECT: OPERATING CRITERIA FOR BUILDING 910 DISTILLATE TRANSFER JAL-025-93

Ref: C. A. Bicher ltr (CAB-042-93) to R. W. Boyle, Solar Pond Building 910 Operations, Distillate Transfer, April 14, 1993

The referenced letter states that operating pressure in the plant raw water system at the intended point of injection of the Building 910 distillate ranges from 60 to 90 psi. This pressure variability complicates the design of the distillate transfer system if capability to discharge from the building must be maintained regardless of system pressure.

Our direction to you is to design the system such that transfer is possible only when pressure is nominally 60 psi. Our reasoning for this direction is as follows:

- Processing will be accomplished in campaigns consisting of 5 day per week operation for 2 to 3 continuous weeks
- Given that the evaporators can process 54,000 gallons per day, total volume processed during the longest (3 week) campaigns will be 810,000 gallons
- Worst case concentration is expected to be 100:1; therefore, 810,000 gallons of feed will produce 8,100 gallons of brine and 801,900 gallons of distillate
- Distillate can be routed to the condensate system at a rate of nominally 20 gpm. Since the condensate transfer system can be operated continuously for 7 days a week, 604,800 gallons can be transferred during the 3 week campaign.
- Tank 215D can hold 500,000 gallons of distillate
- Total holding and alternate disposal capacity is 1,104,800 gallons (604,800 + 500,000)
- Since holding and alternate disposal capacity exceeds generation volume, transfer to the raw water system could be suspended during the entire length of the campaign. Since we have been assured that durations of periods of high raw water system pressure do not exceed the length of the processing campaigns, ability to transfer during those periods is not required.
- It is expected that elimination of the requirement to transfer under conditions of high pressure will result in lower costs for any required modification of the existing system.

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Given that the requirements for the transfer system have been relaxed, we are also directing you to review the possibility of using the existing pumps, with changes to impellers and/or motors, instead of replacing them. Reuse of the pumps would result in significant cost and schedule savings.

We also request that the static pressure of the raw water system be verified through calculation of the difference in elevation between the surface of the holding pond and the pipe at the point of our connection.

cc:

R. W. Boyle  
R. P. Dunn  
D. R. Ericson