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50-324

December 10, 1979

Mr. D. T. Pence, Manager
Effluent Control Development
Science Applications, Inc.
4030 Sorrento Valley Boulevard
San Diego, CA 92121

Dear Dallas:

Reference: SAI Proposal No. 1-132-71-800-21

I apologize for the delay in responding to Mr. Gerald Merigold's letter of October 12, 1979, subject as above. We have reviewed the unsolicited proposal entitled, "Demonstration of a Reactor Containment Building Emergency Noble Gas Recovery Process", and our comments are attached. Although we see some merit in the proposal, we are concerned about the cost of a fullscale system and the benefits derived in terms of an added margin of safety to the health and safety of the public. If the proposal is funded, then we would also recommend that a study be made to evaluate and test the feasibility of alternative noble gas recovery technologies in order to obtain a complete data base that is not prejudiced toward the selective adsorption alternative.

If you wish to persue this proposal with the NRC, I suggest that you direct a letter to Saul Levine, Director, Office of Nuclear Regulatory Research, U.S.N.R.C., Washington, DC 20555. In your correspondence, please feel free to make note of the fact that the proposal has been informally reviewed by the staff of the Effluent Treatment Systems Branch.

If I can be of any further assistance, please don't hesitate to contact me.

Sincerely,

John T. Collins
Deputy Director
TMI Support

Attachment: As Stated

cc: G. Merigold, SAI
R. Bangart

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ETSB COMMENTS ON SAI PROPOSAL 1-132-71-800-21
DEMONSTRATION OF A REACTOR CONTAINMENT
NOBLE GAS RECOVERY PROCESS

J. Wing:

1. Section 3.2

Will the equipment for removing various gaseous components be designed to withstand hydrogen explosion?

2. P. 3-9, third line from top

Correction: "The krypton separation..." should read "The krypton concentration..."

3. P. 3-10, first paragraph

A detailed review of the reported literature or a laboratory test should be made to verify that valve operation would not ignite a hydrogen mixture.

4. P. 3-9, fourth paragraph

Are there any interlocking mechanisms that will be installed to prevent inadvertent desorption of the noble gases in their respective adsorption columns and traps?

W. Burke:

1. Can system be a source for ignition of H₂ in containment?

2. The storage of radioactive gases under pressure in tanks is not acceptable to NRC at the present time since the technology has not been developed

W. Burke (continued):

to provide reasonable assurance that uncontrolled leakage will not occur during storage life.

Therefore, on page 3-3, there would not be the need to separate Kr and N₂ since they could be vented to the environment at a controlled rate. This should save some processing and lower operating cost and equipment cost.

3. It seems to me that this is an expensive way to handle the problem - iodine is easily handled by charcoal adsorption and decay, H₂ by a recombiner, CO₂ is no problem, and noble gases by judicious venting or temporary storage and venting.

R. Bangart:

1. Before a decision is made to fund this proposal, information should be obtained from SAI on the estimated costs of a full-scale system and alternative treatment technologies. Only if it appears to be a cost beneficial concept or is necessary to assure public safety in the event of an accident should this proposal be pursued. If the proposal is funded, then studies to evaluate and test the feasibility of alternative noble gas recovery technologies should also be sponsored in order to obtain a complete data base that is not prejudiced toward the selective adsorption alternative. Except for the plant that has an accident, such a system is another cost which will not result in any benefit.