

## INTER-OFFICE CORRESPONDENCE

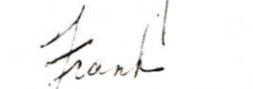
0830-L-HS

DATE May 7, 1985

TO	REFERENCE
Lab Directors/Program Managers	
FROM	SUBJECT
Henry Shaw/F. W. Henrikson	CR Interactions

Attached are two copies of a preliminary handout and back up information for the June 12th meeting with Lee Raymond. The objective of this handout is to show how CR interacts with other Exxon organizations beyond the Science and Innovation transfer programs. Please revise, update, and fill in missing information on one copy and send back to either of us by May 15.

  
Henry Shaw

  
F. W. Henrikson

HS/FWH/tr

cc: R. W. Cohen  
P. M. Eisenberg  
W. R. Epperly  
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## SYSTEMS

### UPSTREAM

#### SUB-SEA DISPOSAL OF CARBON DIOXIDE FROM GAS PRODUCTION

B. P. Flannery, A. J. Callegari, K. W. Steinberg (EETD), R. J. Lantzy (EETD)

As a consequence of CR's involvement in the "CO<sub>2</sub> Greenhouse" issue, we helped Technology complete an evaluation of the environmental consequences of discharging very large quantities of SO<sub>2</sub> and CO<sub>2</sub> from one location, namely Natuna. We modeled the sub-sea disposal of CO<sub>2</sub> in the shallow basin near the Natuna site and found that retention in the sea is only about a decade, as opposed to 1000 years if the CO<sub>2</sub> is disposed in the deep ocean. We recommended that sub-sea sparging of CO<sub>2</sub> not be implemented since it offers little advantage over direct atmospheric release, and it has a detrimental effect on local sea chemistry by lowering pH.

#### CONTROL OF HYDROGEN IN THE ALYESKA HEAT PIPES

R. K. Lyon, R. Stolz, R. S. Poliziotti, F. Gamble (EETD),

N. Sweed (EETD)

The Alyeska heat pipes, which operate on a vaporization-condensation cycle of ammonia, were not functioning properly because ammonia was decomposing and creating a high hydrogen partial pressure. This reduced the rate of vaporization of ammonia, thereby reducing the heat exchange rate needed to prevent the permafrost from thawing. Dick Lyon participated in a brain-storming session on the problem. His suggestion that hydrogen be removed from the heat pipe became the key to solving the problem. Subsequently, EETD and CR successfully tested "hydrogen getters" in a joint effort.