

IODP Engineering Development Panel Review

Proposal	635-Full2
Short Title	Hydrate Ridge Observatory
Lead Proponent	Marta Torres
EDP Watchdogs	Jack Germaine, Axel Sperber
EDP Proponents	Peter Flemings, Bill Ussler
Review Date	28 September 2005

EDP discussed Proposal 635 full2 and the companion unsolicited SCIMPI proposal by Moran, Paull, Trehu, and Ussler submitted to the IODP. Jack Germaine was given access to the SCIMPI proposal by Charlie Paull for use in the EDP review. The panel has general support and enthusiasm for the measurement concept but have some concerns about the maturity of the design. The following observations are provided:

Longevity of instrumentation - experience with long-term instrumentation is generally poor (e.g. CORKs; Oil & Gas industry intelligent completions: have failed due to leakages, etc.; the solution has been to weld all connections). The SCIMPI design does not allow for replacement of failed components after installation and therefore considerable attention should be given to the reliability of both components and connections.

Deployment details – Our current technology has the capability to deploy the tool. However, successful deployment depends on rather ideal and unproven performance. Concerns were raised that the tool might hang on the inside of the drill string as the string is removed, the drill string might shear off the umbilical as the bit exits the borehole, the performance will depend strongly on the effective weight distribution of the tool, and that damage might be caused by heaving of drill string.

Performance details – Successful operation of the tool depends on complete and uniform borehole closure (will closure progress from the bottom of the hole, will closure be symmetrical, will fluid be trapped between modules, will the transducers make adequate contact with the borehole wall, etc).

The EDP suggests that the proponents give consideration to the following:

- Long-term failure analysis (MTBF of components and connections) to establish an estimate of the expected operational life of the tool.
- Land testing of blank modules to refine the design and deployment procedures.
- Offshore testing in shallow waters and shallow boreholes while measuring the rates and completeness of closure (e.g. in Galveston Bay, which can be drilled at low cost compared to sea deployment costs)
- Modification of the deployment to provide controlled back-fill to prevent irregular collapse and assure contact to borehole wall.