

# Sandia Laboratories

Albuquerque, New Mexico  
Livermore, California

date: August 17, 1982

to: Distribution

*A. W. Dennis*

from: A. W. Dennis - 9442

subject: Response to Comments on Large Steel Model Design

- Enclosure: (1) Request for Comments and Comment Received, Copies of these these letters were handed out at the June 9, 1982 Advisory Panel Meeting
- (2) Ltr., R. J. Reedy to A. W. Dennis, 9442, subject: Peer Review Comments on Large Model, dtd., July 13, 1982

This response will be limited to those comments which bear directly on the objective in my May 3 letter:

This model will be utilized to demonstrate the validity of the results of the small scale steel model experiments and to investigate the potential degradation in internal pressure capacity due to conventional construction methods and major penetrations.

## Comments by Peter Cybulskis, Battelle Columbus Laboratories

1. Sandia will request that the fabricator utilize techniques similar to those which are utilized in field erections whenever this is practical and, further, require that the fabricator notify Sandia whenever there is a substantial difference between shop technique used and normal field practice.
2. Please refer to this item in R. J. Reedy's letter of July 13.
3. Please refere to this item in R. J. Reedy's letter of July 13

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4. The question of the model support structure is serious and will be resolved in the near future. At present, we are considering three options:
  - a. embedment of the bottom head in concrete,
  - b. supporting the bottom head on a circular steel support collar, and
  - c. constructing a reusable bottom head similar to the base being used in the small model tests. The same base would then be used during testing of the concrete model structures.

For the present, this comment will remain open.

5. Refer to this item in R. J. Reedy's letter of July 13.

Comments by W. C. Baker - Southwest Research Institute

1. No action required.
2. A single contract will be used for design, fabrication and erection.
3. Sandia will conduct a material properties investigation to provide actual material properties for use in the analysis.
4. A decision has not yet been reached on the base structure. See response 4 to Cybulskis for details.
5. The leak tightness criteria has not caused potential vendors any problems.

Comments by J. J. Ucciferro - United Engineers and Constructors

Sandia plans to obtain a vessel suitable for N-stamping but not N-stamped. In this matter, we are facing the dual issue of credibility and cost. If the cost of fabrication of the vessel is substantially impacted by ASME N-stamp requirements, we will consider relaxation of those requirements which contribute to high cost but do not contribute equally to high credibility.

Comments by T. J. Ahl - Chicago Bridge and Iron Company

- 1a. The 3/8" wall thickness was selected to allow welds typical of those used in full size containments to be used in the model. We would prefer to use the thinner stock if the welded seam can be reasonably replicated. This item will be left open for the present.
- 1b. Both the 12 foot shipping diameter limitation and field erection of the test vessel will be reconsidered. This item will be left open for the present.
- 2a. A pneumatic experiment is planned. This will be clearly stated in the final design criteria.
- 2b. The recommended ANSI/ANS-56.8-1981 leak test specification will be called out in the final design criteria.
3. The support structure for the bottom head has not been defined yet. Please refer to the response to Cybulskis' comment 4.

Comments by R. J. Reedy - R. J. Reedy, Inc.

- 1 & 2     The support structure for the bottom head has not been defined yet. Consideration is being given to using a ring support which could be manufactured at the same time the vessel is fabricated. Please refer to the response to Cybulskis' comment 4 for additional information on the bottom head.
3.        Quality Assurance will be called out in the final criteria rather than Quality Control.
4.        The possibility of using a thinner top head will be considered in the final design criteria.
5.        Two openings are required in the model to provide adequate ventilation during the installation and adjustment of instrumentation.
6.        We plan to adopt a policy similar to the recommendation in your July 13 letter (Ucciferro 1).
7.        The final criteria will address the attachment of the support structure to the containment model. A decision will be made prior to the time the final criteria is written regarding the character of the support structure.

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8. Article NE-3000 will be referenced in final criteria, not NE-300
9. Vendors have not objected to leak rate requirements and do feel that this is unacceptable. We plan to modify this requirement as suggested by Tom Ahl (comment 2b).
10. Support structure design decisions will be made prior to issuing the final design criteria.

AWD:9442:jp

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May 3, 1982

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