March 7, 1984

LS05-84-03-006

50-220

MEMORANDUM FOR: Dennis M. Crutchfield, Chief
Operating Reactors Branch #5, DL

FROM: James J. Shea, Project Manager
Operating Reactors Branch #5, DL

SUBJECT: SUMMARY OF TRIP - MARK I CONTAINMENT TORUS STRUCTURAL ANALYSIS

Representatives of the NRC, NNECo, Boston Ed., VYNPCo and Teledyne Engineering Services met at the Teledyne office in Waltham, MA at 9 a.m. on February 16, 1984. The purpose of the meeting was to review anticipated responses to an NRC request for additional MARK I torus structural information forwarded to Northeast Nuclear Energy Co. (NNECo) by letter dated December 22, 1983. A list of attendees is enclosed.

Teledyne representatives addressed the major issues related to all the plants for which Teledyne did the Mark I Containment analysis (Vermont Yankee, Millstone 1, Fitzpatrick, Nine Mile Point and Pilgrim). They also addressed the plant specific issues for Millstone and Vermont Yankee that were contained in the staffs requests for additional information. Vugraphs presented at the meeting can be obtained from the Project Manager.

The major issues related to SRV test and analysis were: (1) the validity of SRV tests performed with drywell differential pressure to verify torus integrity; (2) the SRV test shell pressure magnitudes; and (3) SRV drag test results and the method of analysis.

Based on the information provided at the meeting the staff and its consultants determined that the first issue can be resolved if each Teledyne licensee provides a conclusion that, based on a actual plant data, prior to the Mark I modifications, SRV discharges through ramshead quenchers with zero pressure differential occurred without the structural integrity of the torus being affected.

The second issue concerns the low SRV test shell pressure magnitude for some plants and the high shell stresses relative to code allowables. Based on the generic and plant specific discussions related to Vermont Yankee it became apparent that the shell stresses were close to the code allowables because a higher service level (level B instead of C) than required by the ASME code was used. The use of a higher service level for these structures permitted Teledyne to perform bounding calculations that encompassed many accident and transient event load combinations. The staff and its consultants, based on the presentation, agree with Teledyne that the actual margins to the code allowables are much greater than they appear in the Plant Unique Analysis Report (PUAR) and that the torus can probably withstand much higher shell pressure than observed in the SRV tests for some plants.

Based on the Teledyne presentation related to the third generic issue the staff and its consultants agreed that the SRV drag test results and analysis method is probably acceptable, since the SRV drag pressure used by Teledyne compare favorably with other plant data. However the staff and its consultants have decided to review and approve this issue for each Teledyne plant on a plant specific basis.

The Teledyne responses to plant specific requests for additional information related to our PUAR review for Vermont Yankee and Millstone were then discussed. The responses addressed our concerns with the exception of one item concerning calculated and measured stresses (Item 15) for which Vermont Yankee was requested to provide clarification.

/S/	/S/
Byron Siegel, Project Manager Operating Reactors Branch #2 Division of Licensing	James J. Shea, Project Manager Operating Reactors Branch #5 Division of Licensing

Enclosure:
List of Attendees

cc w/enclosure:
See next page

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