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PEP-4 PRESSURE CERTIFICATION TEST REPORT

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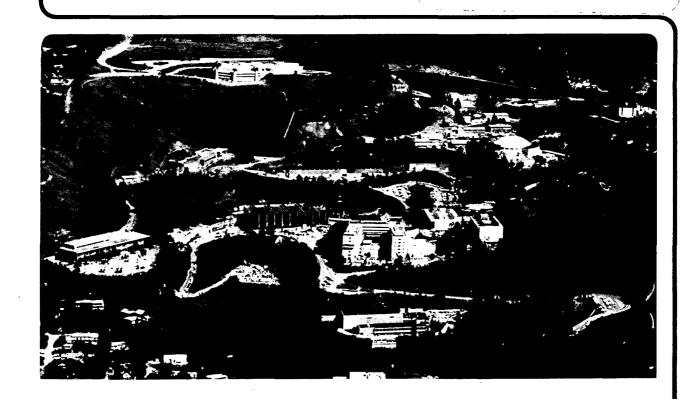
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LBID 395 LAWRENCE BERKELEY LABORATORY - UNIVERSITY OF CALIFORNIA ENGINEERING NOTE P40401 M5716 B 1 of 2 LOCATION DATE Mechanical Engineering Dept. Berkeley 4 May 1981 Larry E. Brown PROGRAM - PROJECT - JOB PEP-4 PRESSURE CONTAINMENT PEP-4 PRESSURE CERTIFICATION TEST REPORT 6 May 1981 Rev. A Rev. B 13 May 1981 SLAC's requirements for pressure vessel personnel safety certification are a proof test of the vessel at 150% of maximum allowable operating pressure. Relief valves shall be set at 110% of the maximum allowable operating pressure. For PEP-4, the maximum allowable operating pressure is 150 psig. The relief valves are set at 165 psig. The pressure envelope is described on the following documents:-E.N. P40401, M5296 Bore train design and analysis McLaughlin É.N. P40401, M5687 Bore train assembly and operating 2. G. Miner procedure E.N. P40200 M5684 Pole base and pole tip assembly P. Purgalis Pole base to magnet leg attachment E.N. P40200 M5679 P. Purgalis bolts E.N. P40401 M5363 5. Prototype TPC feed thru ring G. Miner pressure test E.N. P40401 M5461 Feed thru rings and seal rings as reported on certification of G. Miner pressure components В E.N. P44001 M5305, M5461 7. Calculations of stress and buckling in the cryostat vacuum vessel M. Green E.N. P40401 M5461 8. Coil cryostat inner wall as reported M. Green certification of pressure components Electrical feed thru assembly Dwg. 20C6876 10. Manifold installations North End Dwg. 1903266 Dwg. 1903296 South End Dwg. 1903306 11. Westside piping

G. Miner

Rev. 3/13/1980

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12. Pressure test scenario

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AUTHOR	DEPARTMENT	LOCATION	DATE	
Larry E. Brown	Mechanical Engineering Dept	• Berkeley	4 May 1981	
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13. PEP-4 Pressure certification test procedure

F.N. P40401 M5717 L. Brown

The pressure envelope as described above was tested as follows:

Before testing the main envelope of the PEP-4 experiment, all of the pump outs were tested. When every pump out showed no appreciable leaks, the main tests were undertaken.

The main tests were divided into two parts. The first part was to qualify the upper west side platform as being a safe place to work. The piping was isolated from PEP-4 and was pressurized to 225 psi. This could be done safely by working from the floor level at the South face. The test personnel were protected by the bulk of PEP-4.

For the second test phase control area was moved to the west side platform so that the bulk of PEP-4 protected the test personnel from any failing component.

The test procedure was essentially followed except that no leak hunting was done as there was no noticeable reduction in pressure during the pauses in the pressurization sequence.

The pressure envelope was successfully pressurized to 225 psi on 26 March 1981 which certifies it for use at 150 psi. The two pole bases separated by .080 inches at 225 psi.

The test personnel and LBL witnesses were:-

- L. Kerth
- D. Fancher
- G. Miner
- L. Brown

The SLAC witness was John Mark.

While the vessel was depressurized to 100% rating all non test personnel were restricted from access.

This vessel was approved for use at 150 psig.

/nyc

Distribution: L. Brown

- R. Madaras
- G. Schnurmacher

- P. Hernandez
- J. Mark (SLAC)
- C. Hoard SLAC
- K. Mirk
- R. Kenney
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