

Steve,

For your info, - Follow up on it  
German Meeting.

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*Chuck*

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Datum  
22.11.1979

Dear Chuck,

in our discussion two weeks ago we spoke about water hammer problems in pipes. For your information you find enclosed the Quick Look Report of the HDR Feed Water Check Valve Tests SRV200 and a model description of the code DAPSY. There is an update of DAPSY for valve simulation and if you are interested in the code you should order the new version of DAPSY from GRS.

As I mentioned in your office, I did some test calculations with DAPSY concerning the water hammer effect due to sudden condensation of isolated steam bubbles in subcooled water. The test problem shows that at the effect and the resulting loading on the piping system can be evaluated, but the initial conditions must be assumed, i.e. under the assumption of isolated steam in the pipe the pressure peaks and the forces due to the water hammer can be calculated.

If you want more information I would appreciate further contact.

Yours sincerely

*T. Grillenberger*

T. Grillenberger

enclosures

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Vorsitzender des Aufsichtsrates  
Min. Dir. Dr. Ing. W. Sahl  
Geschäftsführer  
Prof. Dr. A. Birkhoff Prof. Dr. G. Kellerhals

## Initial conditions of test calculations

pressure 5 Mpa

temperature

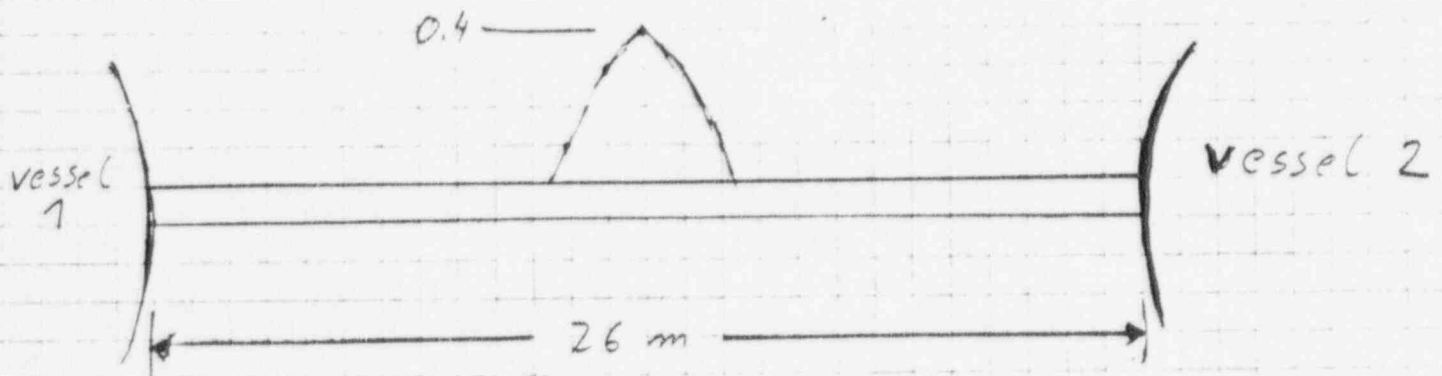
water 166 °C

steam 264 °C

velocity 0 m/sec

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Initial void profile in the pipe

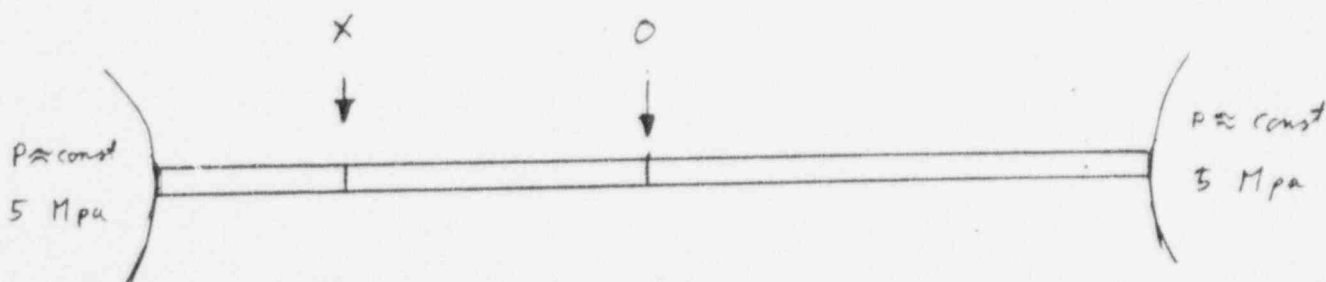
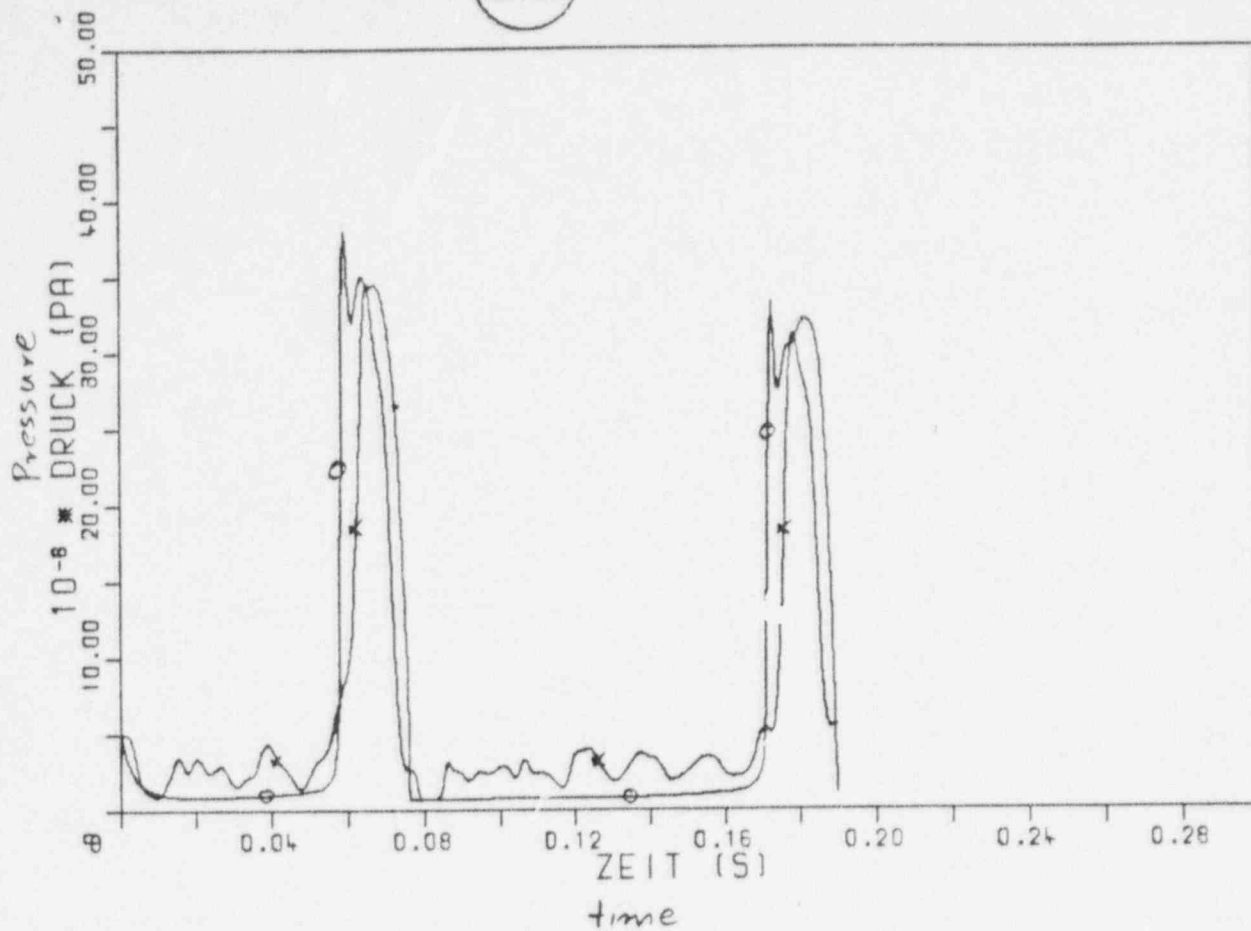


Assumptions: test pipe of 26 m length between two vessels with an isolated steam bubble of 4 m length and about 0.3-0.4 cross sectional area

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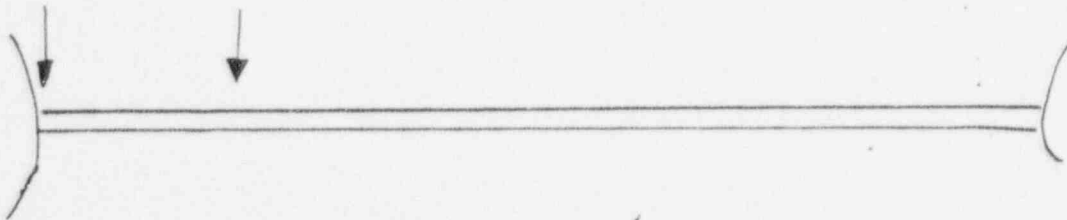
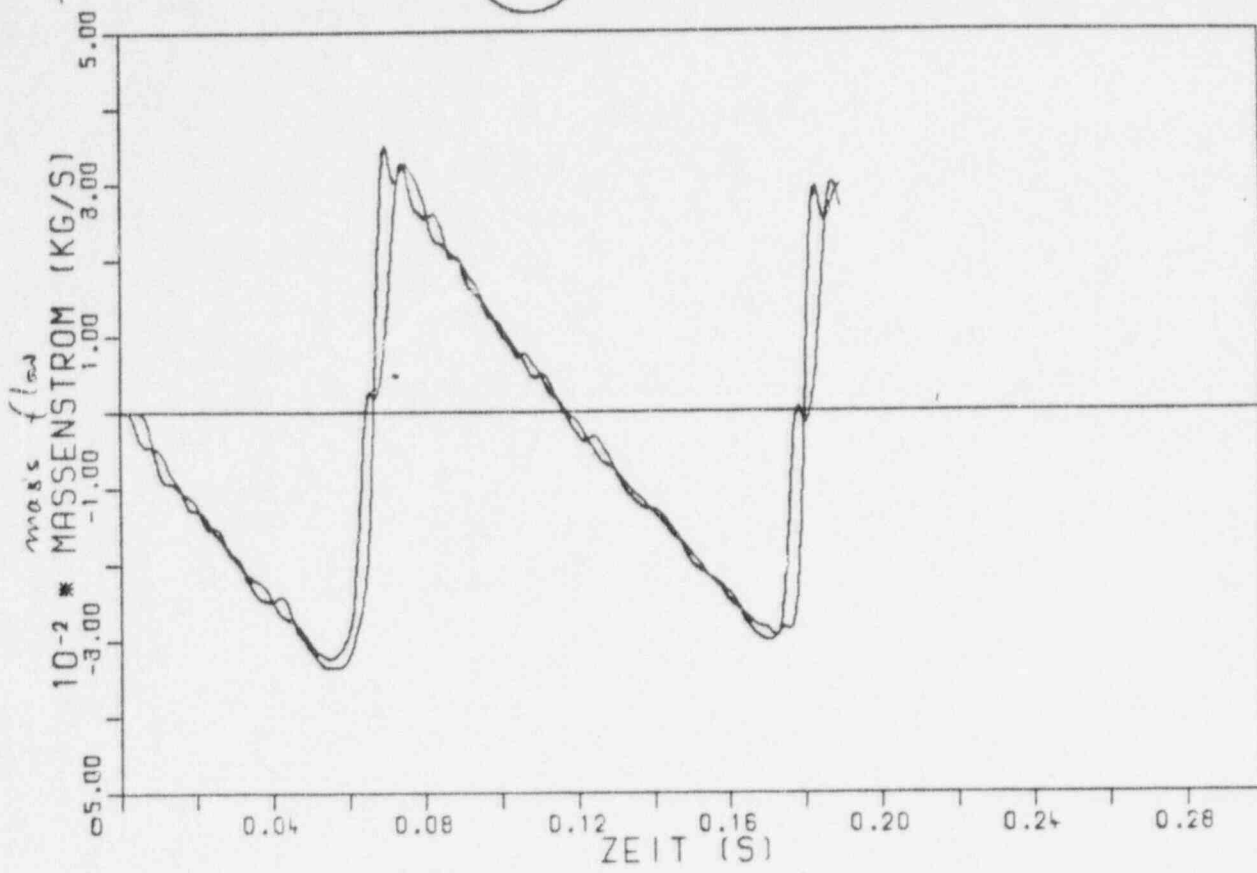
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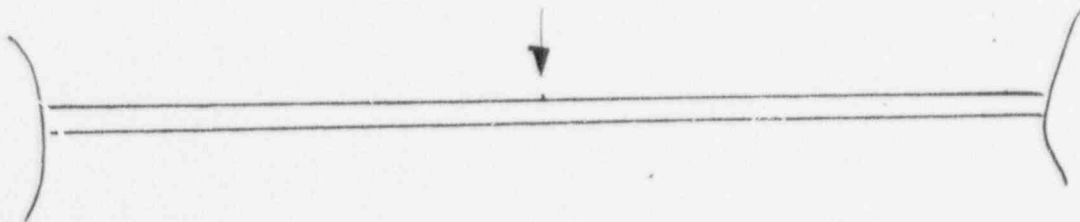
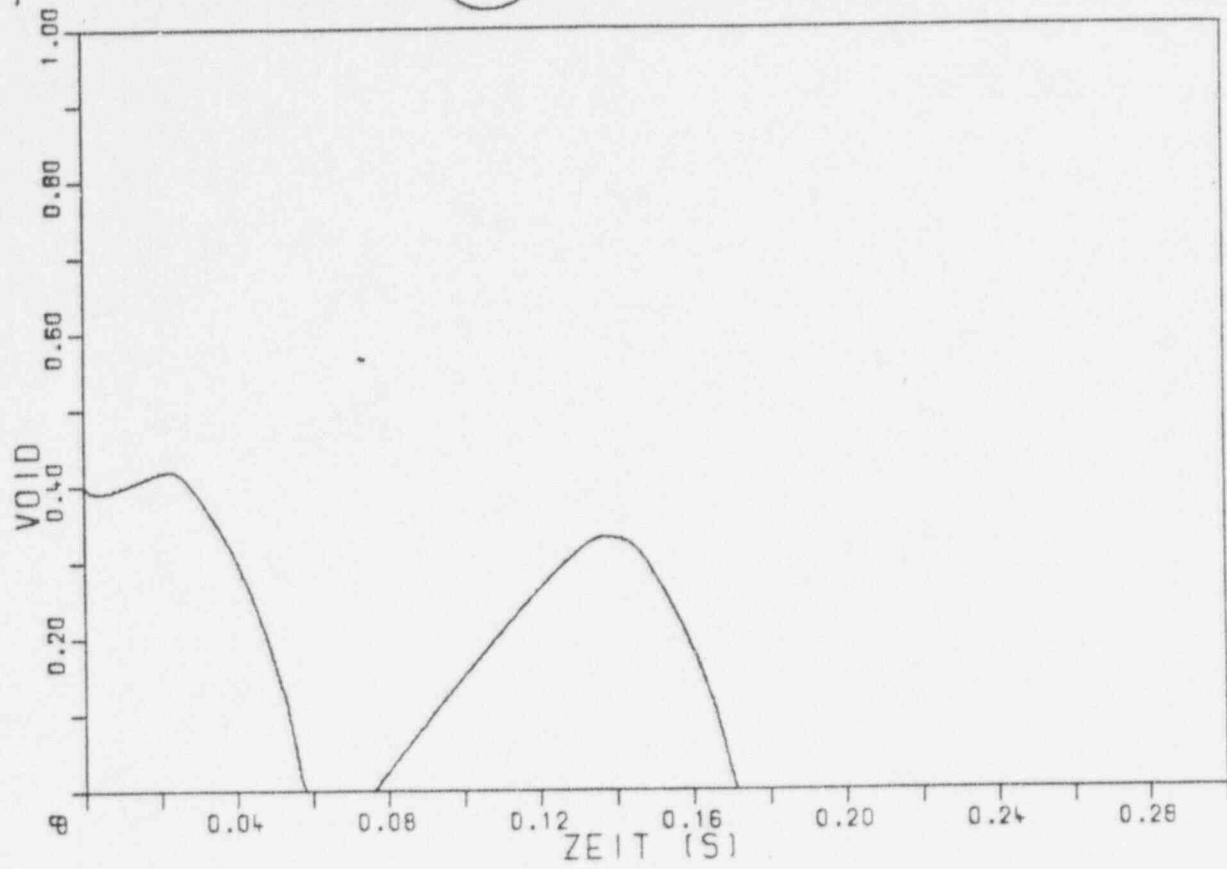
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