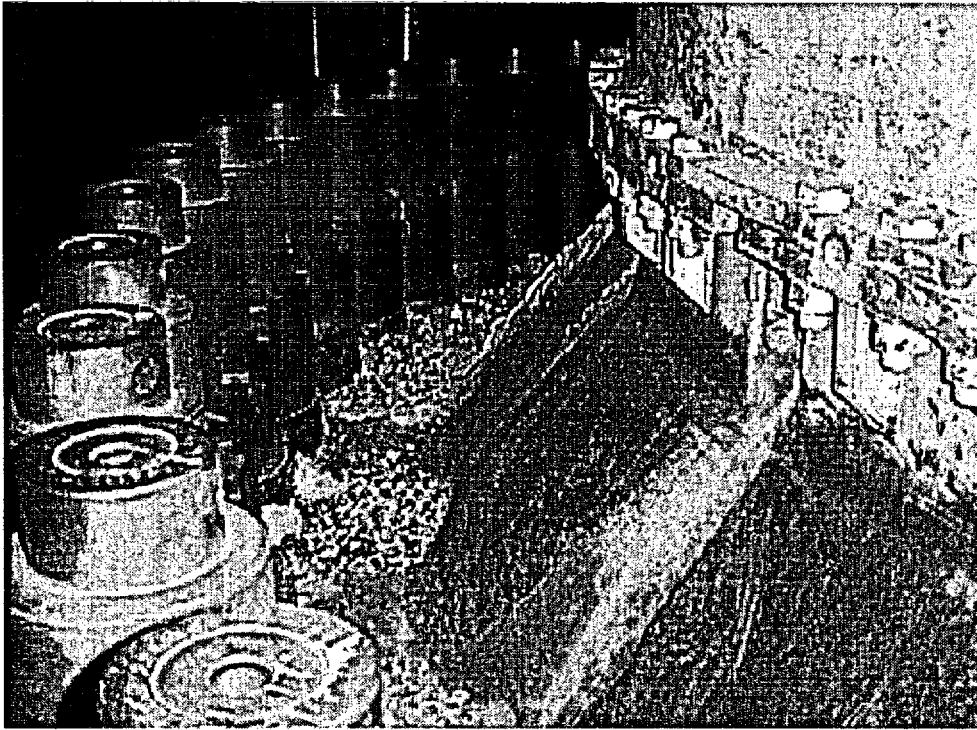


From: Adeline Saso > R-III  
To: John Grobe  
Date: 7/31/02 8:27AM  
Subject: ANS Pres

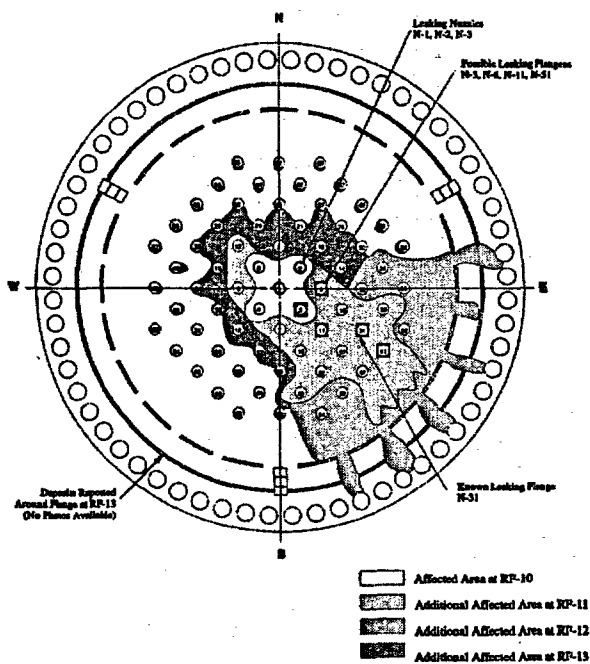
*Rel whole  
document*

*X/2*



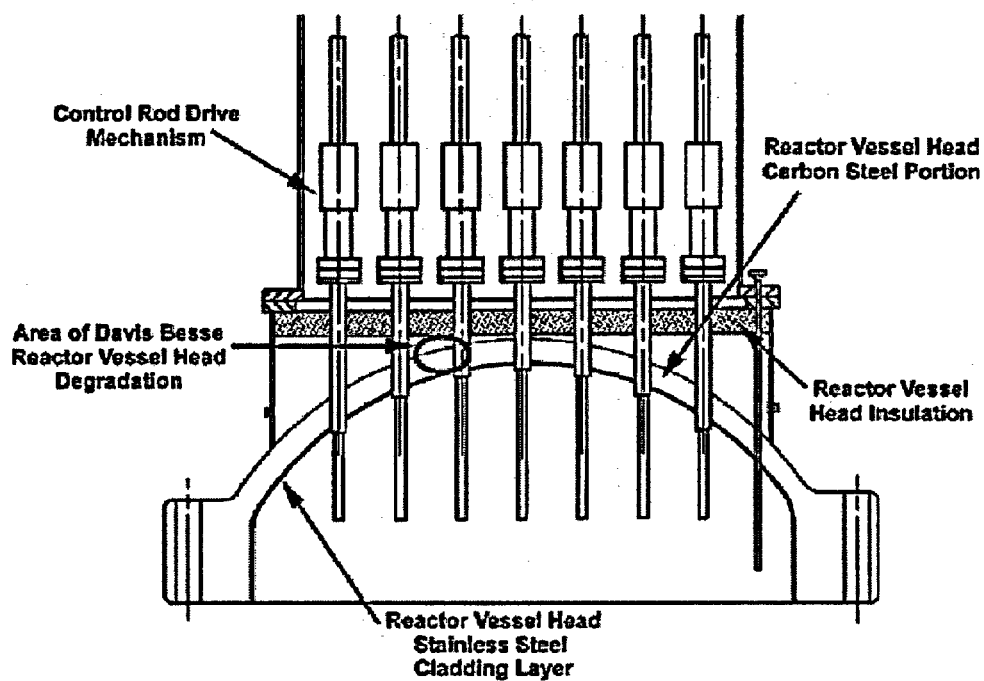
VG

Source: EPR/DRI

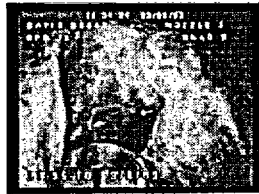


VG

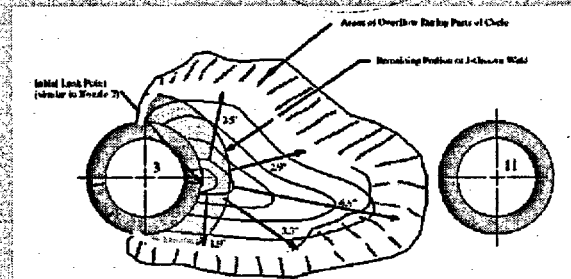
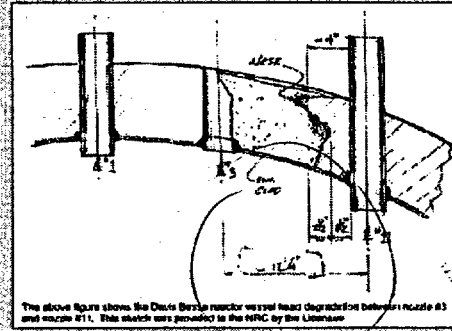
### Reactor Vessel Head Degradation Location



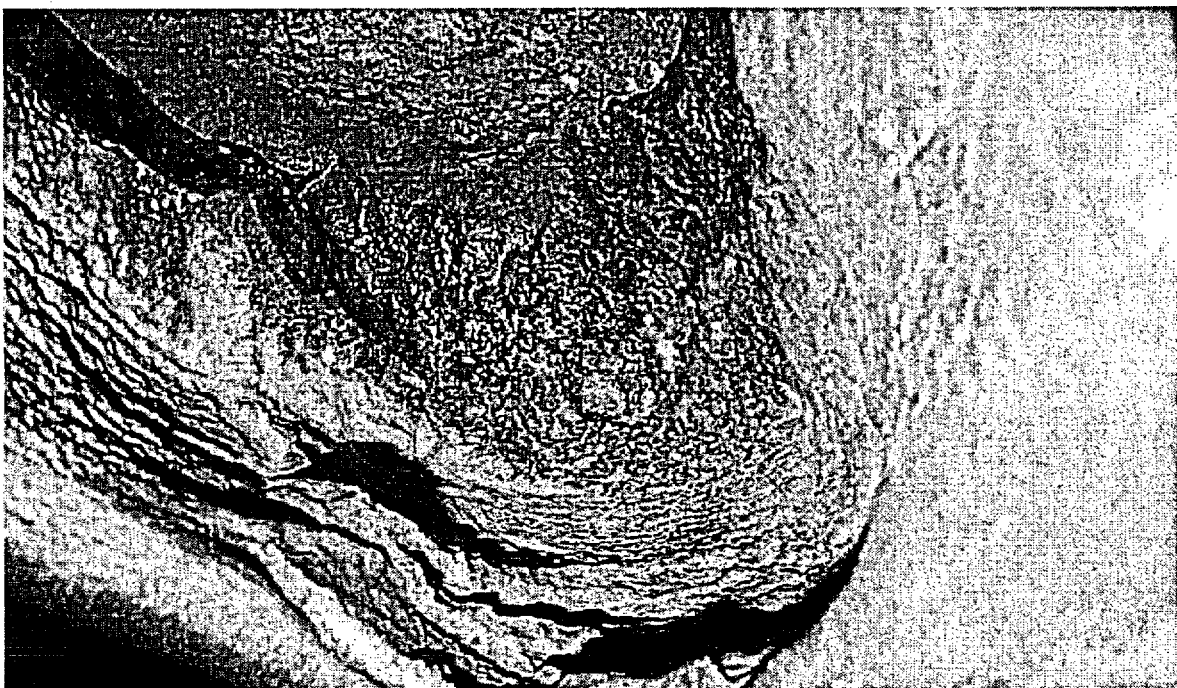
VG

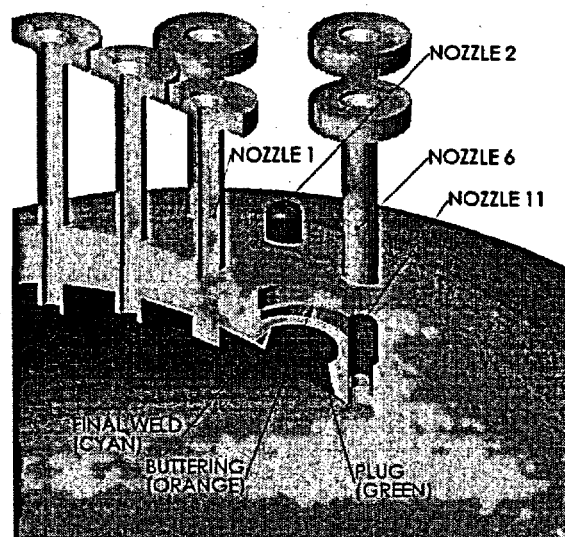


### Measurements Reported 15<sup>th</sup> April 2002 by Davis Besse Power Station

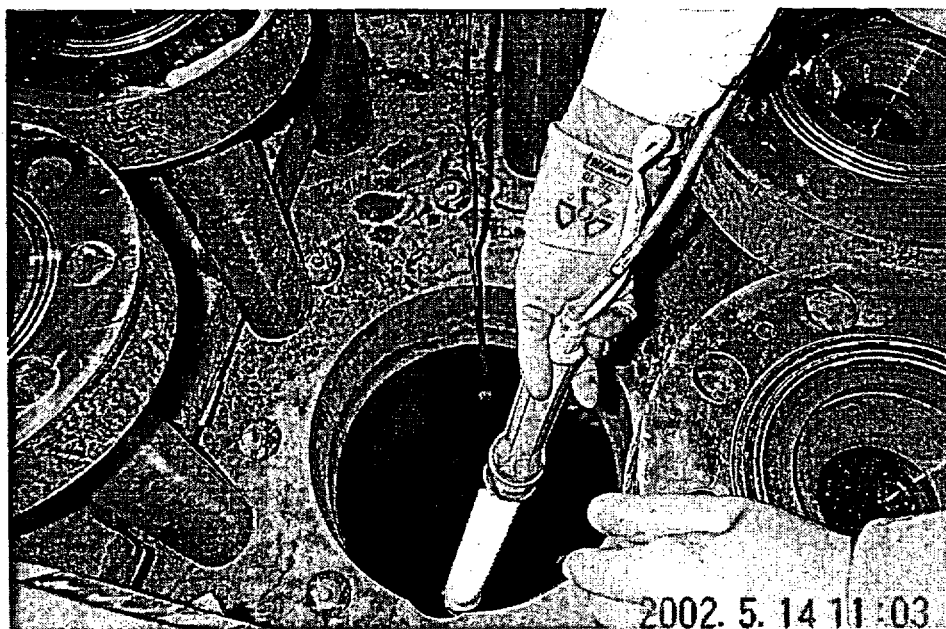


VC



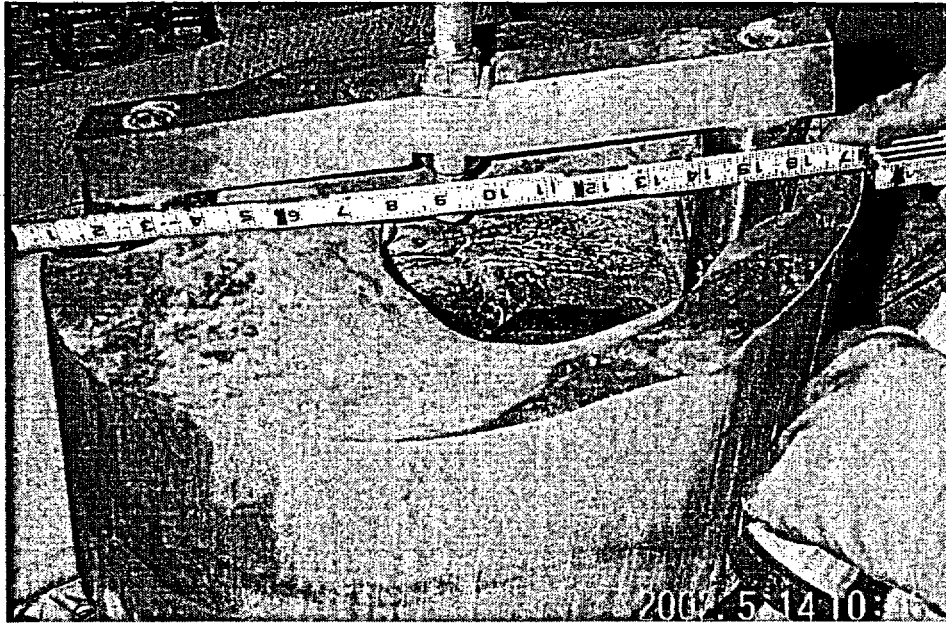


VG



VG





VG

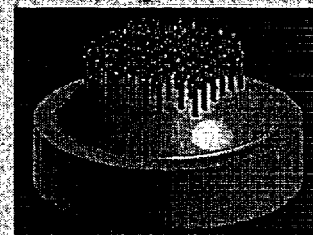
---

**Initial deterministic analysis**  
**Probabilistic analysis**

**Cavity growth leading to cladding failure at pressures in the range of the operating pressure (2165 psi)**

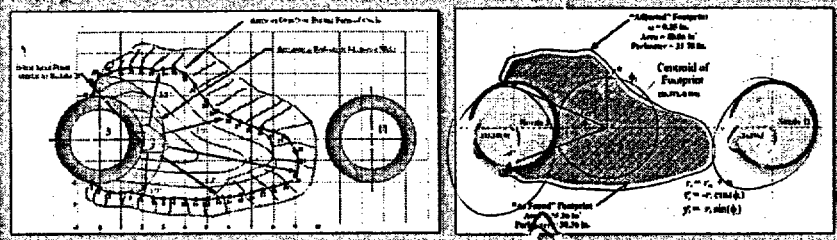
**Estimates of the additional operation time needed to achieve failure at pressures in the range of the operating pressure (2165 psi)**

## Design of the Head



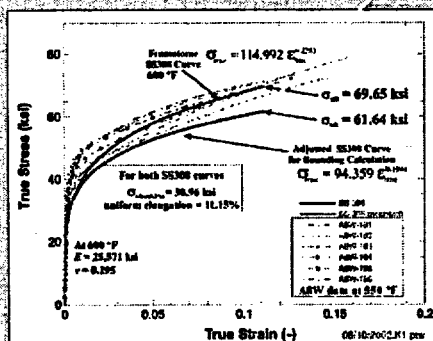
## Wastage Geometry

(upper bounded from April 02 pressure measurements)



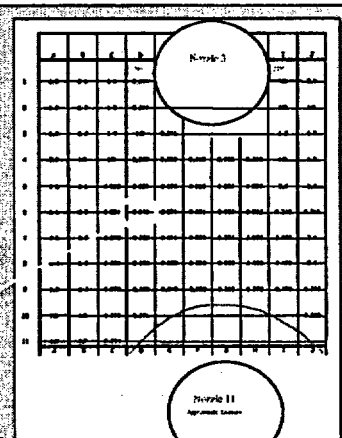
## Cladding Tensile Properties

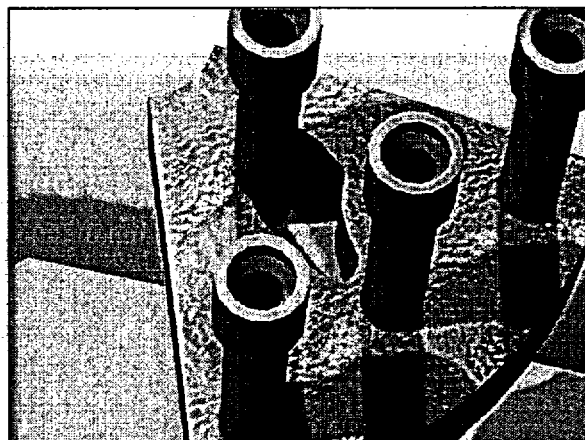
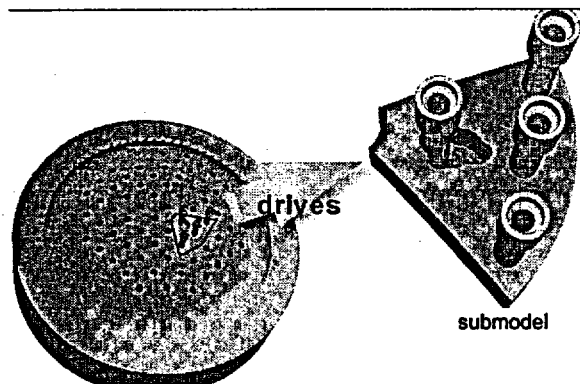
(lower bounded from available data)



## Cladding Thickness

(initial thickness 0.24 in.)

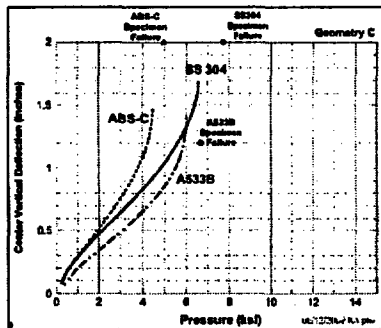
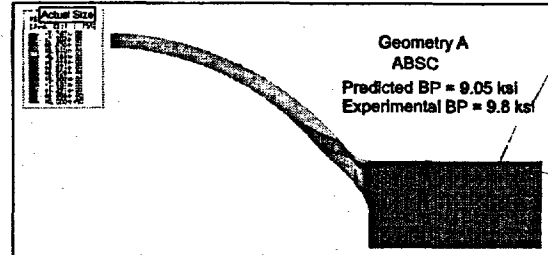




VG



- disc burst tests reported by P. Riccardella [ASME '72 PVP]
  - 6-in. diameter
  - 1/8 and 1/4-in. thick
- Experiments used to quantify uncertainty and bias in using FE analyses to predict rupture of an unsupported membrane subjected to pressure loading
- This statistical distribution is then used along with 3D FE model of Davis Besse cavity to assess probability of cladding rupture in the "as found" condition



VG

