MEETING

NRC/PG&E/AAR Corp.

April 21, 2004

BLISTERING ON BORAL MATERIAL

IN SPENT FUEL POOLS

MEETING AGENDA

- Reasons for this Meeting
- Brief History of HBPP Unit 3
- Licensing Basis for Boral Cans
- Description and Use of Boral Cans
- Results of Inspection
- PG&E Engineering Conclusions
- AAR Discussion of Blistering Phenomena

Reasons for this Meeting

- Non-fuel pool characterization – Summer 2003
- Discovered blister on boral can - November 2003
- Seabrook Part 21 in review at Plant
- Formed TRG, drafted NCR contacted AAR Corp. in November 2003
- Contacted NRC – November 2003 -Feburary 2004
- Completed Boral Can evaluation - March 2004

Plant History and Location

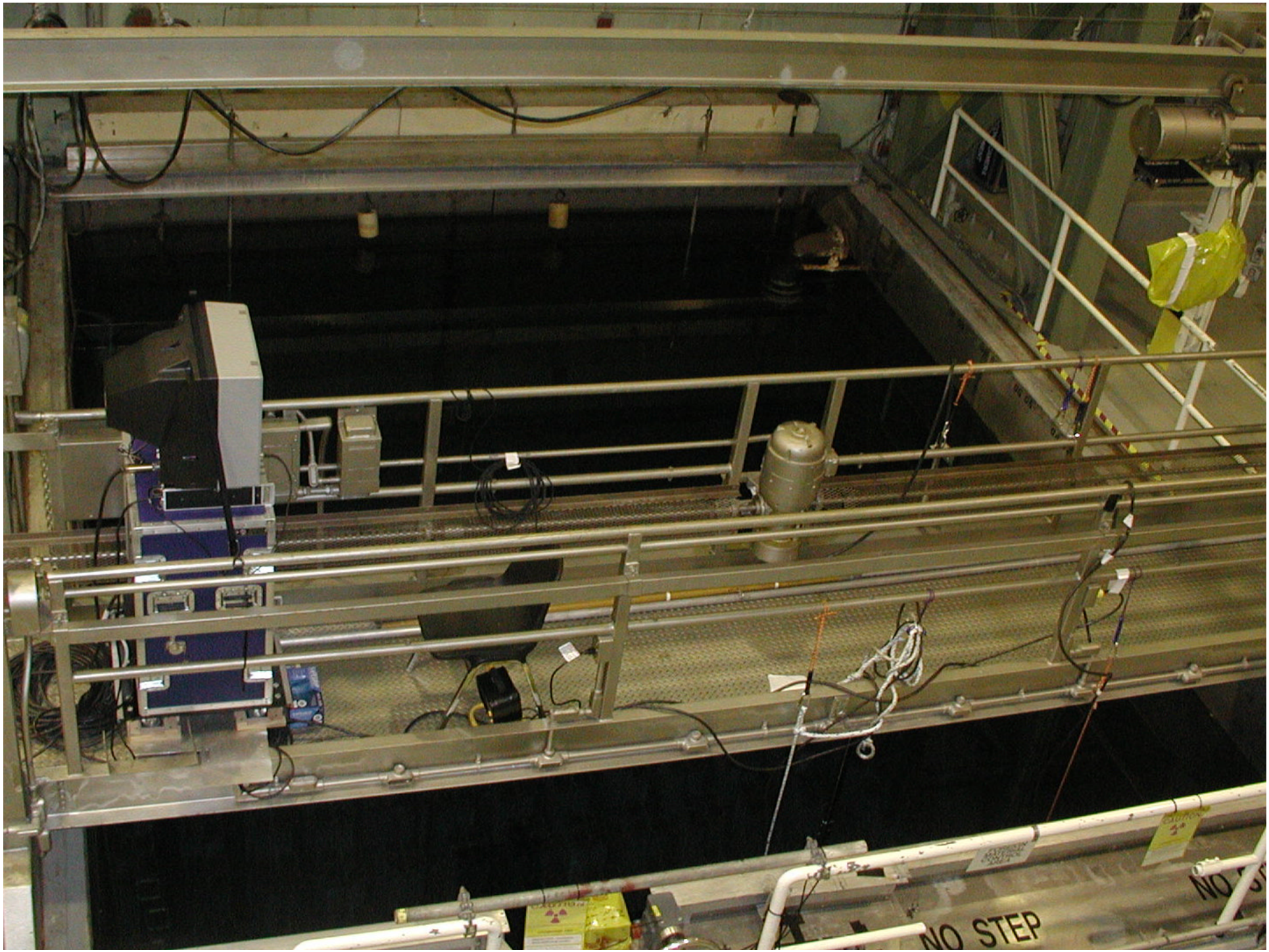
- Commercial Operation in 1963
- Shutdown in 1976 for Refueling and Seismic Modifications
- 63 MWe natural circulation BWR
- Reactor and Spent Fuel Pool located “below ground level”
- Located in Eureka, CA, approximately 80 miles south of the Oregon border.

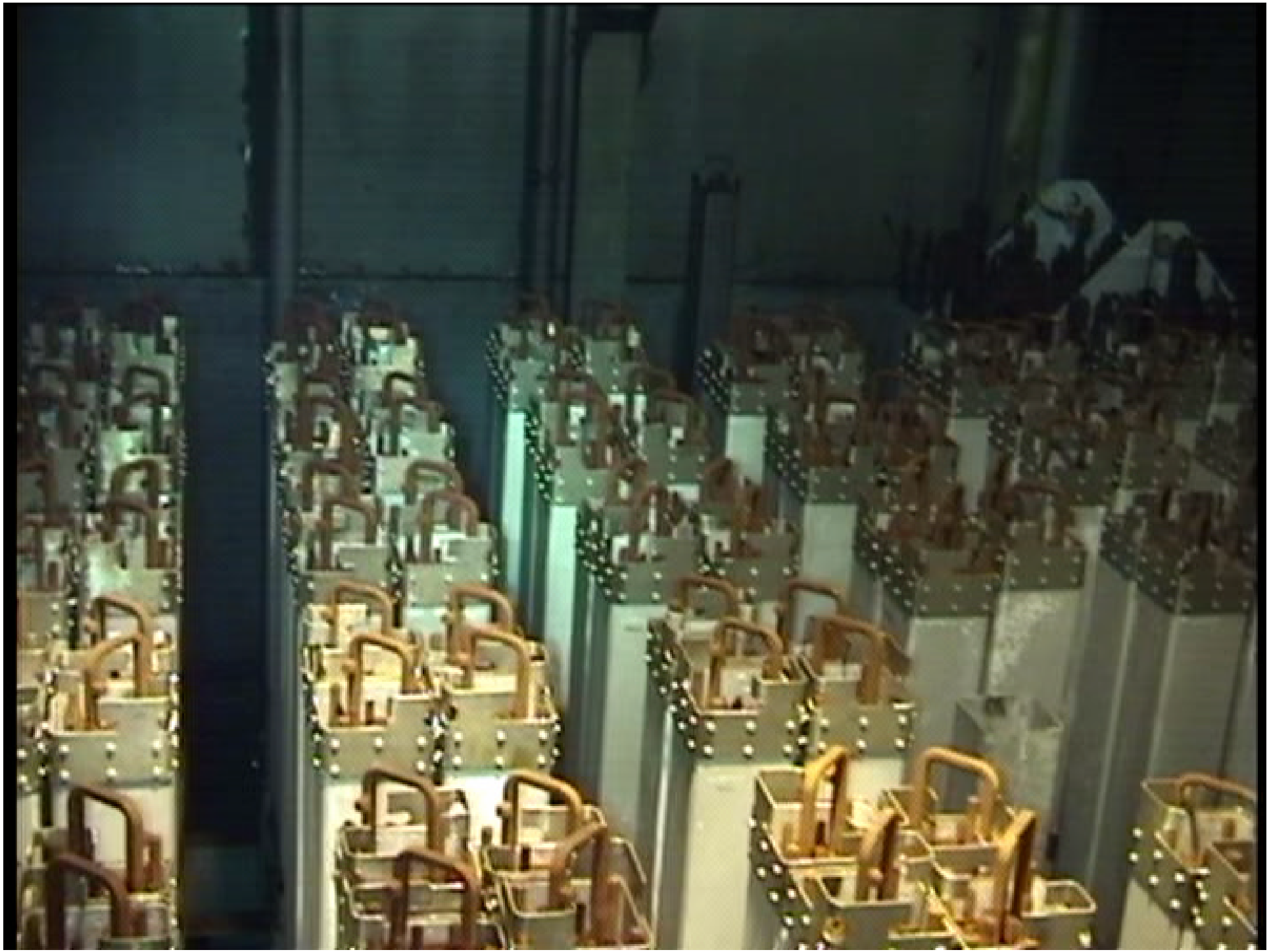
LICENSING BASIS

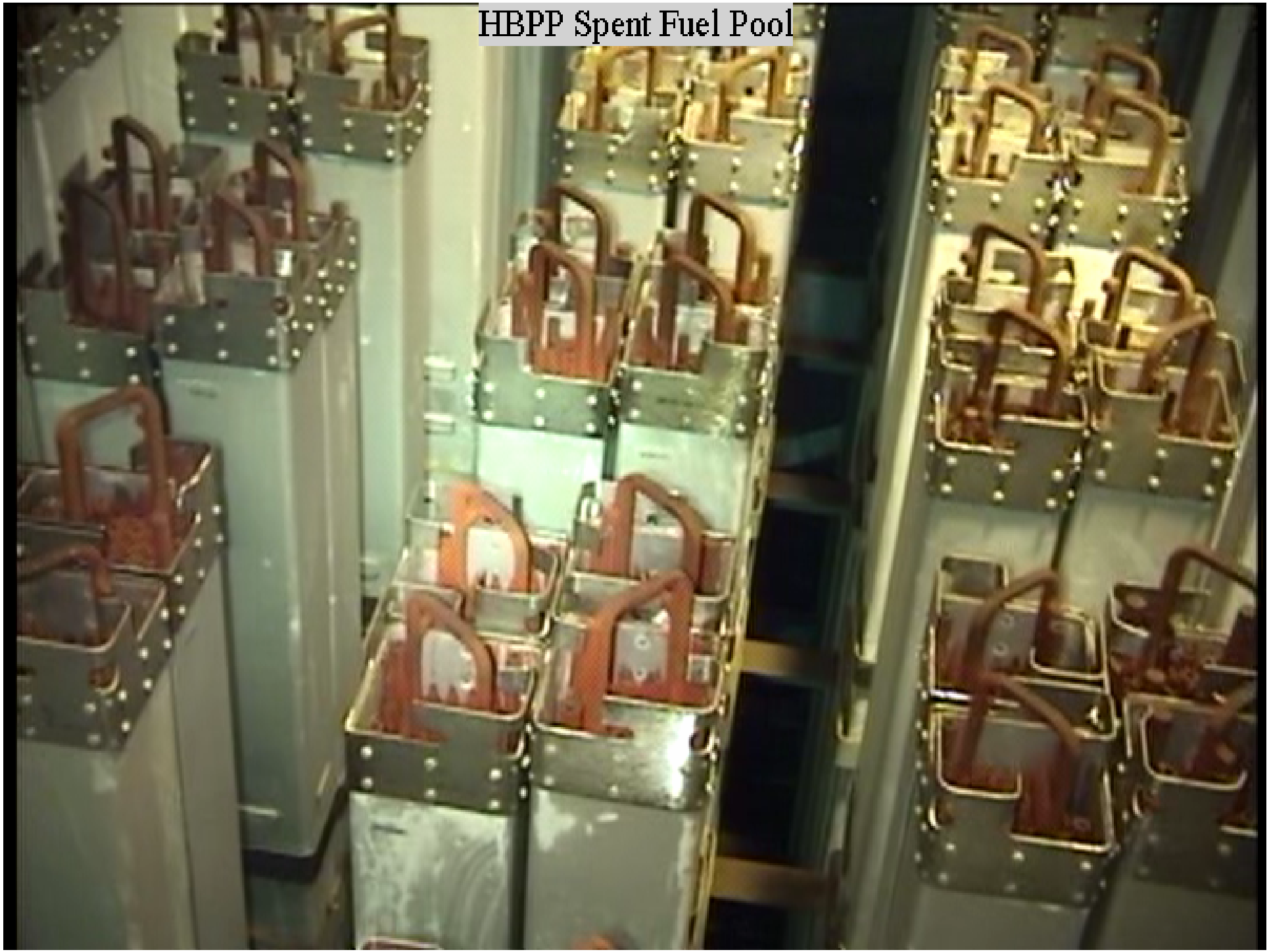
- 1963 -1976 – Plant Operations
- July 1984 – SAFSTOR Application
- 1985-6 - Boral Cans installed to Maintain K_{eff} less than 0.95
- Current Licensing Basis
  - Technical Specification 4.2.1
  - DSAR Section 2.3.1.2 and Appendix C
  - NRC SER 2.2.1

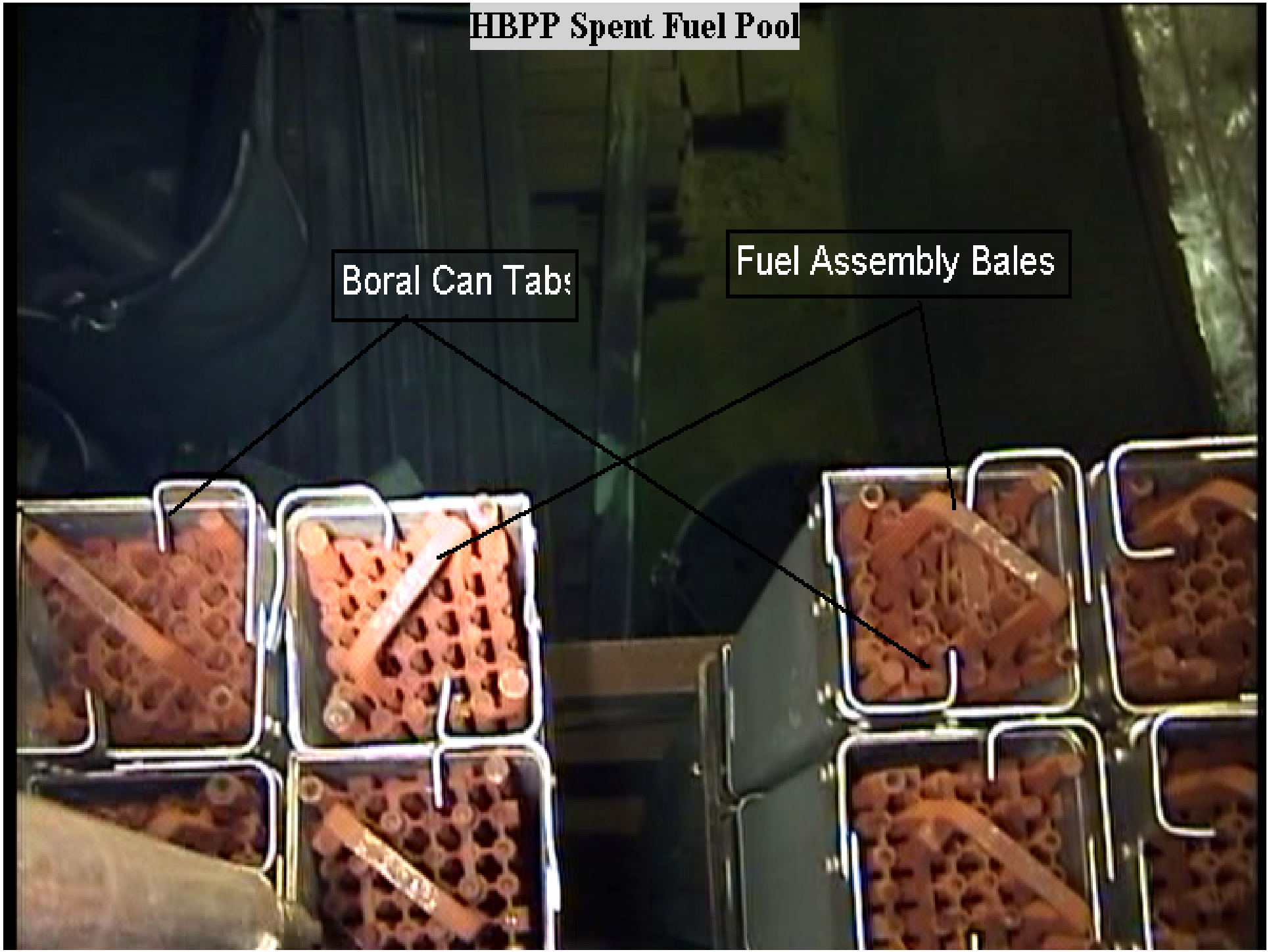
Boral Cans

- Cermet of Aluminum, Boron Carbide and Aluminum
- Rolled into a square tube, a cradle at the bottom, tabs at the top.
- Fuel assembly is “surrounded” in its’ own Boral Can

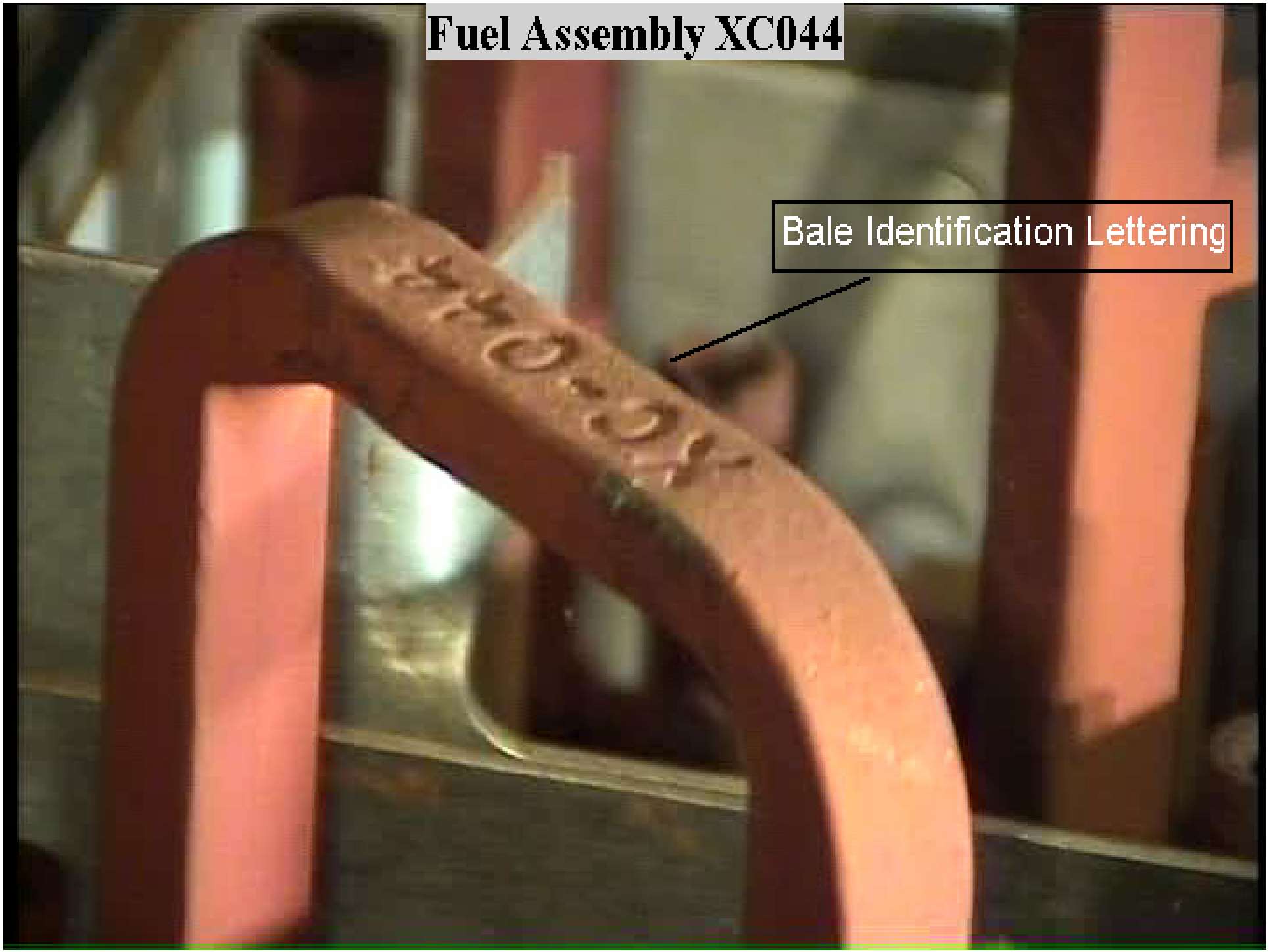

NO STEP

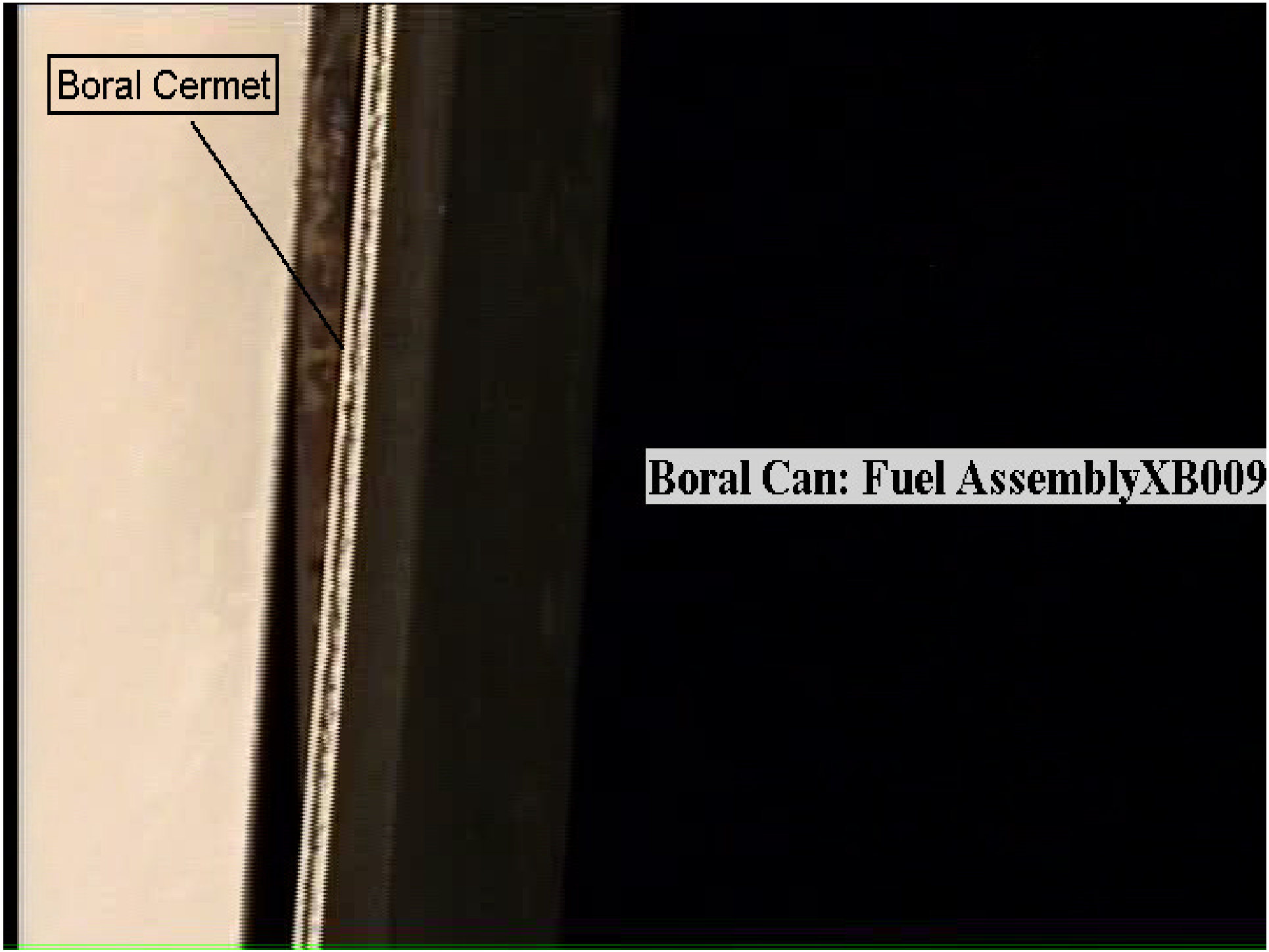


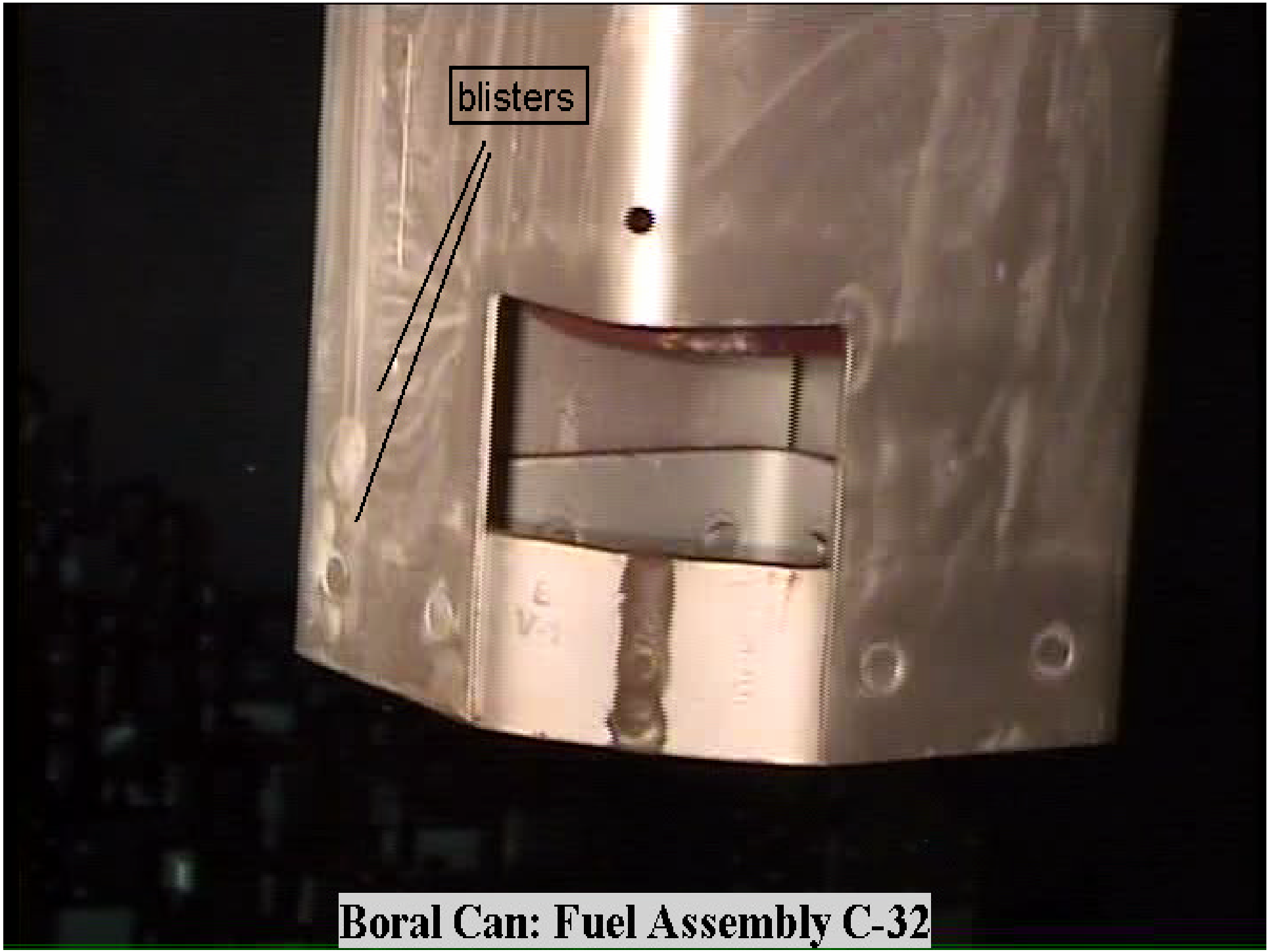

HBPP Spent Fuel Pool


HBPP Spent Fuel Pool
Boral Can Tabs
Fuel Assembly Bales

Fuel Assembly XC044




Boral Cermet
Boral Can: Fuel AssemblyXB009

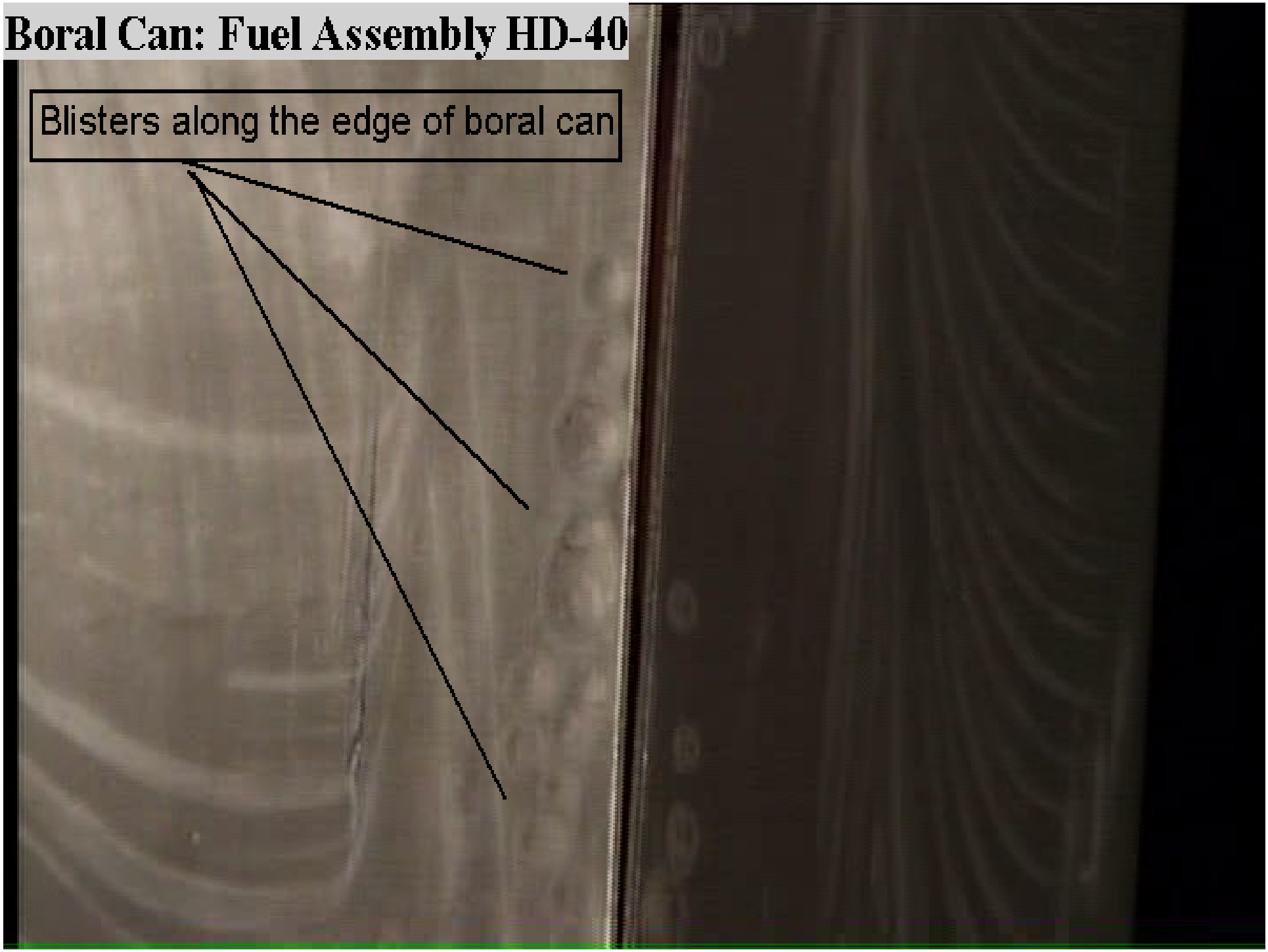


Boral Can: Fuel Assembly C-32

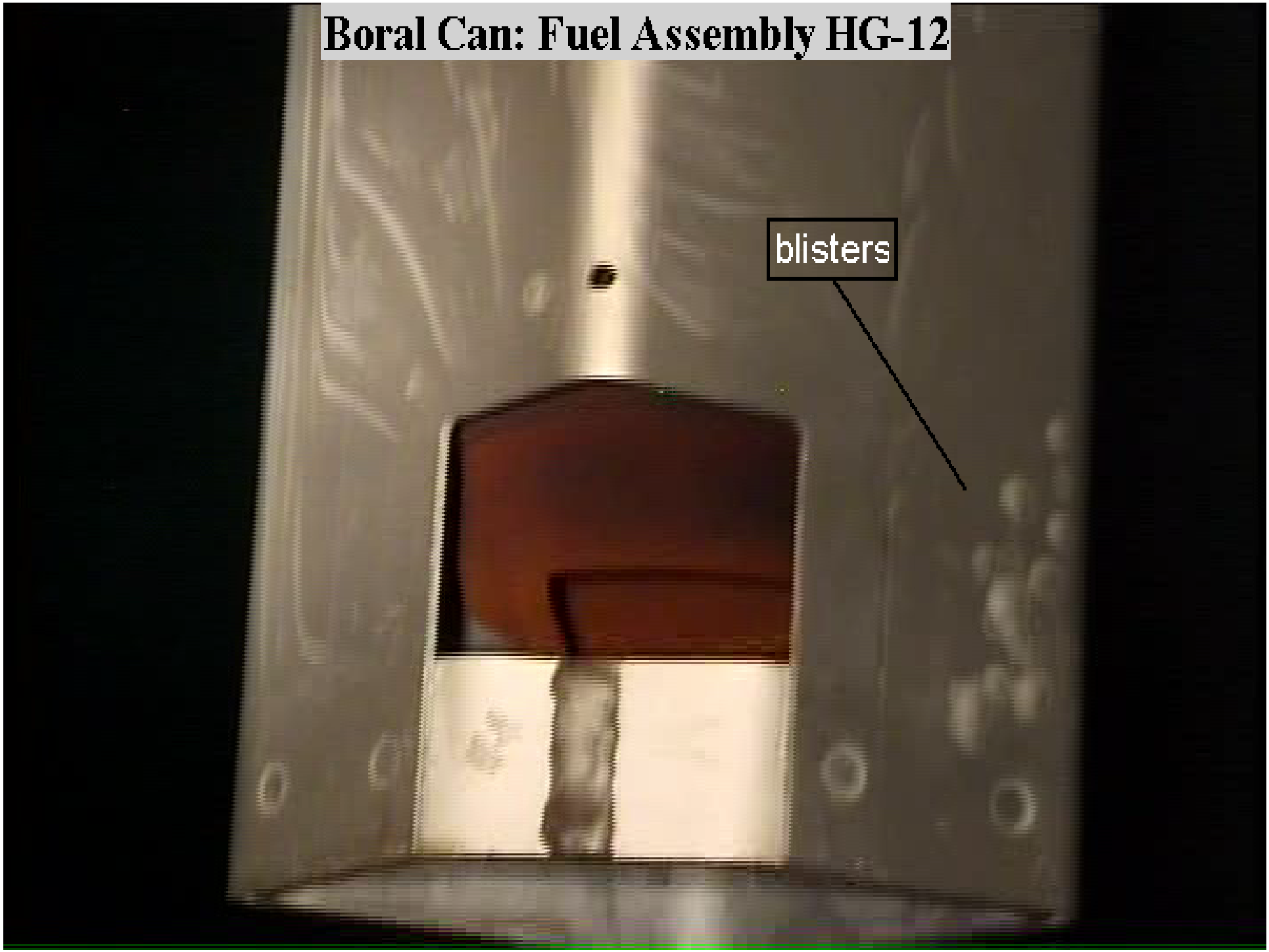

boral can: C-20

Boral Can: Fuel Assembly HD-40

Boral Can: Fuel Assembly HD-40



Boral Can: Fuel Assembly HG-2


Boral Can: Fuel Assembly HG-12
blisters

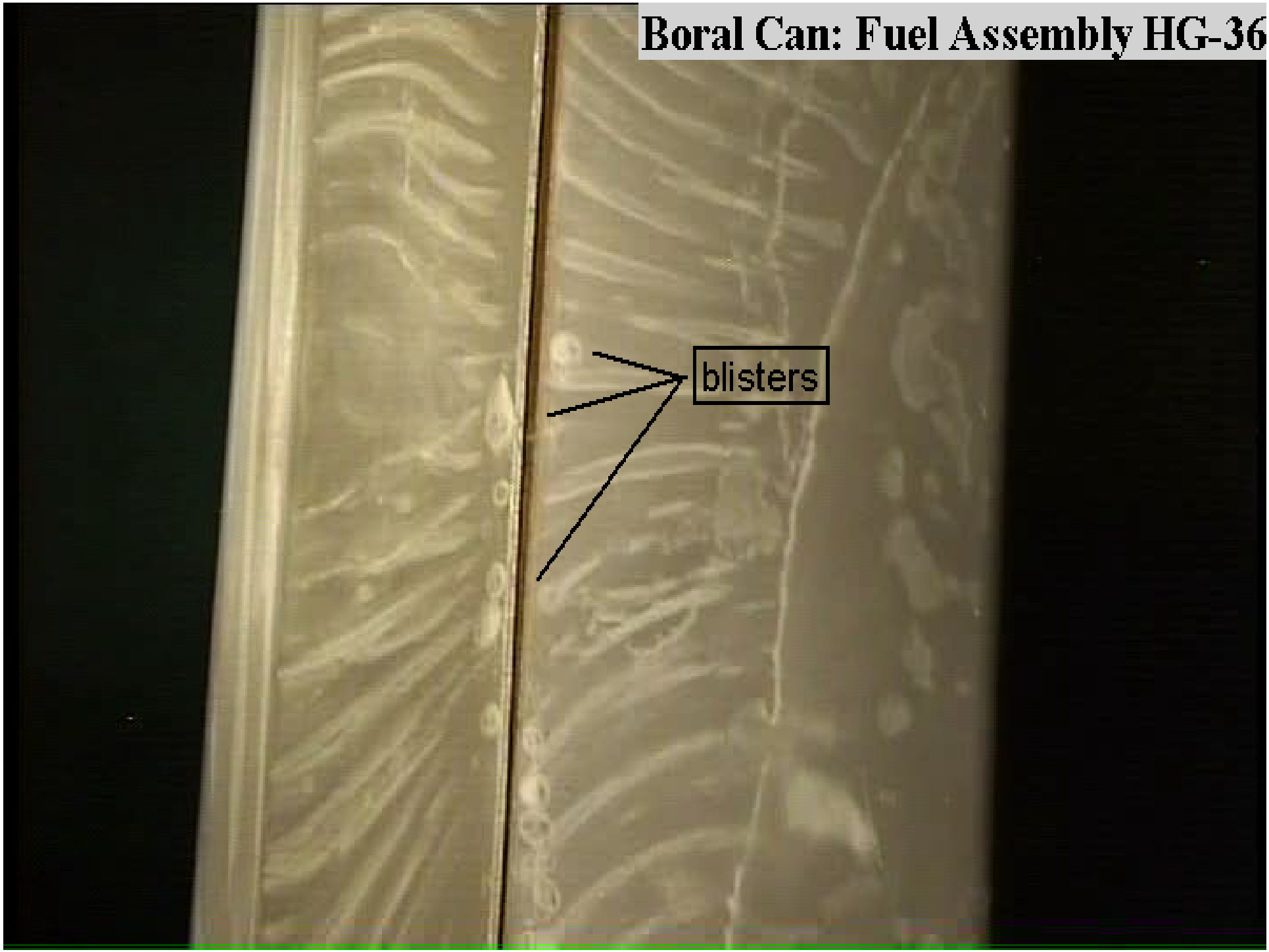
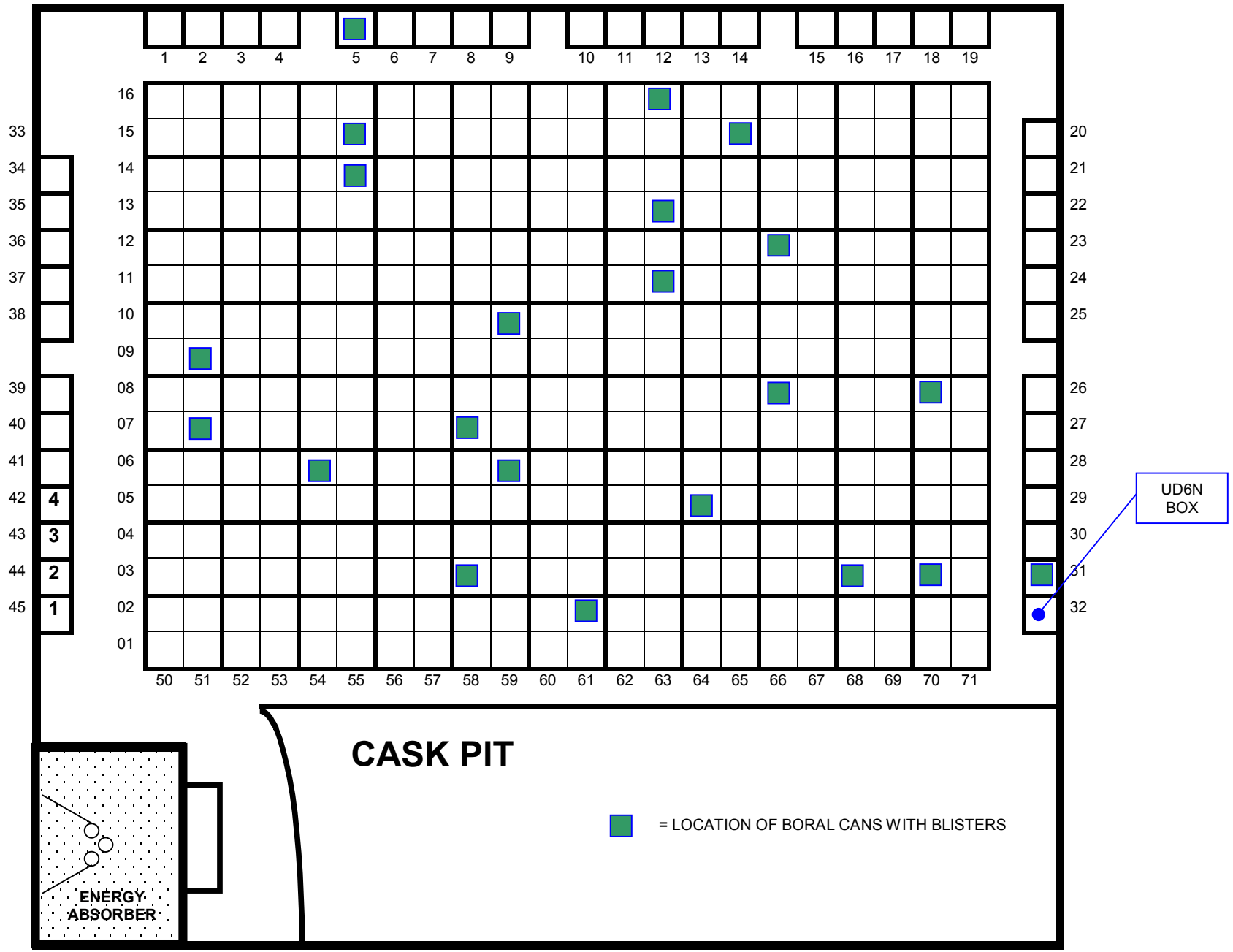

Boral Can: Fuel Assembly HG-36
blisters

Figure 1. HBPP SPENT FUEL POOL (showing location of Boral cans having blisters)



Inspection Results

- 387 Boral Cans Inspected
- 22 individual cans identified with blisters
- Approximately ½ of the blistered Boral Cans have one to two blisters
- The other half of the blistered Boral Cans have more than 10 blisters each

PG&E Engineering Conclusions

- Blisters don’t affect neutron attenuation
- Blisters don’t affect Structural integrity of Boral Cans
- Similar to Seabrook Part 21 issue
- Determined not to be safety significant
- Evaluating next steps