

TASK CLOSE OUT DOCUMENT

file
IAG

Task Scope Preliminary Assessment of Gas Configuration
from Therapeutic Response during Transfer to
Natural Circulation

To: M. Levenson
S. Levy
E. Zebroski

Task No. 38

Date Complete 4/28/79

Reason felt task is complete:

Quick Assessment performed - More detailed study to follow

Members of Committee

E. Zebroski / for S. Levy
Signed
Committee Leader

2004 269

TO: R. ARNOLD
S. LEVY
M. LEVENSON

FROM: E. ZEBROSKI

SUBJECT: CORE CONDITION INDICATIONS AFTER CHANGE
TO NATURAL CIRCULATION ON APRIL 28, 1979

Based on data on 21 Core Outlet Thermocouples (Appendix), there are three types of regions in the core:

- I. Severe blockage, high thermal input, long cooling path
- II. Severe blockage, lower thermal input, long cooling path
- III. Minor blockage, short cooling path, high or low thermal input

The data are tabulated in I, II, III.

Regions I and II overlap extensively, covering a rounded, roughly rectangular region about 60" by 80" in plan view centered at about 6-7. -

Significance

- A. The difference in heat generation in adjacent "blocked" channels suggests considerable local lateral fuel movement has occurred, at least in the upper core region.
- B. The short cooling path (i.e., good flow region) is immediately surrounding the poor flow region defined in A.
- C. The picture that the blocked region is cooled mainly by lateral conduction and convection is consistent with these observations.

Conclusion

Continued good coolable geometry and stable behavior is now highly probable, barring only severe thermal or hydraulic shocks.

I. High Blockage High Thermal Input Long Path

	Peak T	ΔT	Time to Peak
H9	340	+110	160m (+100° in 20m)
H8	337	+42	50m
K11	299	+57	50m
M7	292	+62	60m

II. Severe Blockage Lower Thermal Input Long Cooling Path

	Max T	ΔT	Time
G5	290	+9	45m
G9	265	+25	80m
G6	260	+10	100m
E7	257	+22	160m
E9	248	+10	50m
F7	225	+11	160m
F8	186	+10	150m

III. Short Cooling Path

	Peak T	ΔT	Period of Time (Minutes)
H5	309	-49	10m
M9	274	-16	5m (-14 at 10m)
M10	256	+12	15m
G13	256	+5	10m -
K5	253	+5	10m
H13	245	+3	5m (35° spike(35-45m)
L11	236	+8	5m 3° spike at 35-40M
K12	234	+4	5m
L6	237	-12	20m

EZ:eg