



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

JUN 15 1976

Gus C. Lainas, Chief, Containment Systems Branch, DSS
THRU: John A. Kudrick, Section Leader A, Containment Systems Branch, DSS

TRIP REPORT - MONTICELLO S/R VALVE TEST

On May 29, 1976, I visited the Monticello Nuclear Power Plant to witness the safety/relief valve tests. The tests, however, were postponed because of an instrumentation problem that occurred in the start-up testing. Nevertheless, I reviewed the tests' results from the start-up tests and also attended a working meeting with the representatives of the General Electric Company, NUTECH Corporation and Northern State Power. A list of attendees is attached. The status of the testing is summarized as follows:

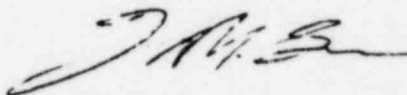
1. During checkout testing by actuating one SRV (conducted on May 25), all strain gauges recorded one-side movement of the structures instead of the expected vibratory response. The pressure transducers, on the other hand, measured 2-3 cycles of bubble oscillation. A reference strain gauge was installed and the recording system improved.
2. Additional checkout testing was performed on May 28. The results of these tests showed a peculiar response of all strain gauges including the reference strain gauge. They all recorded a "jump" during the very early transient before the pressure transducers showed any pressure response inside the pool. The meeting held on May 29 was aimed at a resolution to pinpoint the problem.
3. The effort appeared mainly on the fixes of the strain gauges. However, I had noticed some other concerns and discussed them with representatives of GE following the meeting. Those concerns are:
 - a. Failure of both pressure transducers located on the ramshead discharge. The information from these two pressure transducers is important for verification of the analytical model.
 - b. The I-beam which supports the ramshead and runs tangentially across the pool may affect the pressure field. It will be difficult to justify the presence of this I-beam analytically.
 - c. The test results indicated that the water leg inside the SRV pipe raised rapidly and reached more than 20 feet above the

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original water level after the SRV blowdown was over. This phenomena was considered as a result of the relatively small (3") vacuum breaker for the SRV line. Because of this rapid rise of water leg, the tests on subsequent actuations on the same valve will not be performed by predetermined time intervals between the sequence of each actuation. Instead, they will be performed by predetermined levels of the water leg. In other words, the second SRV actuation will not be initiated until the water leg falls to the predetermined level. This may not represent the actual transient for SRV sequential actuation.



T. M. Su,
Containment Systems Branch, DSS

Enclosure:
As stated

cc: R. Tedesco
J. Glynn
J. Kudrick
File: Monticello Nuclear Generating Plant
V. Stello
D. Eisenhut
L. Shao
R. Stuart
J. Guibert
C. Grimes

MONTICELLO S/R VALVE TESTS
AND
MEETING
MAY 29-29, 1976

ATTENDANCE:

NSP

M. H. Clarity
B. Hill
J. Antony
J. Thie (Consultant)

NRC

T. M. Su

GE

E. Mangrum
J. Hosler
H. Helmholtz
J. Hougount
H. Chang

NUTECH

J. Arterburn
K. A. Hoedeman

GENERAL ELECTRIC

NUCLEAR ENERGY DIVISION

22A4223

SH. NO. 9

REV. 1

TABLE 6.1. MORTICELLO - TEST PLAN

TEST NUMBER	TEST DESCRIPTION	INITIAL PIPE CONDITION	INITIAL POOL LEVEL	DURATION OR DISCHARGE	TIME TO REACH LEVEL	NUMBER OF PULSES (PULSES 1, 2, 3) VOLT, KHZ	REMARKS
1	RP2-T1A	CP, ROL	305-905	-5 (barometric)	Operational Com- mission, 275-308	2 11/2 5	Overhaul section 812 transients and verify initial conditions to maintain arm/MP/IF trip margins. Re-establish level rise data and determine times for sequential activations.
2	RP2-T1B	CP, ROL	305-905	-5	Operational Com- mission, 275-308	10	
3	RP2-T1F	CP, ROL	305-905	-5	Operational Com- mission, 275-308	15	
4	RP2-T1G	CP, ROL	305-905	-5	Operational Com- mission, 275-308	20	
5	RP2-T1H	CP, ROL	305-905	-5	Operational Com- mission, 275-308	25	
6	RP2-T1I	CP, ROL	305-905	-5	Operational Com- mission, 275-308	30	
7	RP2-T1J	CP, ROL	305-905	-5	Operational Com- mission, 275-308	35	
8	RP2-T1K	CP, ROL	305-905	-5	Operational Com- mission, 275-308	40	
9	RP2-T1L	CP, ROL	305-905	-5	Operational Com- mission, 275-308	45	
10	RP2-T1M	CP, ROL	305-905	-5	Operational Com- mission, 275-308	50	
11	RP2-T1N	CP, ROL	305-905	-5	Operational Com- mission, 275-308	55	
12	RP2-T1O	CP, ROL	305-905	-5	Operational Com- mission, 275-308	60	
13	RP2-T1P	CP, ROL	305-905	-5	Operational Com- mission, 275-308	65	
14	RP2-T1Q	CP, ROL	305-905	-5	Operational Com- mission, 275-308	70	
15	RP2-T1R	CP, ROL	305-905	-5	Operational Com- mission, 275-308	75	
16	RP2-T1S	CP, ROL	305-905	-5	Operational Com- mission, 275-308	80	
17	RP2-T1T	CP, ROL	305-905	-5	Operational Com- mission, 275-308	85	
18	RP2-T1U	CP, ROL	305-905	-5	Operational Com- mission, 275-308	90	
19	RP2-T1V	CP, ROL	305-905	-5	Operational Com- mission, 275-308	95	
20	RP2-T1W	CP, ROL	305-905	-5	Operational Com- mission, 275-308	100	
21	RP2-T1X	CP, ROL	305-905	-5	Operational Com- mission, 275-308	105	
22	RP2-T1Y	CP, ROL	305-905	-5	Operational Com- mission, 275-308	110	
23	RP2-T1Z	CP, ROL	305-905	-5	Operational Com- mission, 275-308	115	
24	RP2-T2A	CP, ROL	305-905	-5	Operational Com- mission, 275-308	120	
25	RP2-T2B	CP, ROL	305-905	-5	Operational Com- mission, 275-308	125	
26	RP2-T2C	CP, ROL	305-905	-5	Operational Com- mission, 275-308	130	
27	RP2-T2D	CP, ROL	305-905	-5	Operational Com- mission, 275-308	135	
28	RP2-T2E	CP, ROL	305-905	-5	Operational Com- mission, 275-308	140	
29	RP2-T2F	CP, ROL	305-905	-5	Operational Com- mission, 275-308	145	
30	RP2-T2G	CP, ROL	305-905	-5	Operational Com- mission, 275-308	150	
31	RP2-T2H	CP, ROL	305-905	-5	Operational Com- mission, 275-308	155	
32	RP2-T2I	CP, ROL	305-905	-5	Operational Com- mission, 275-308	160	
33	RP2-T2J	CP, ROL	305-905	-5	Operational Com- mission, 275-308	165	
34	RP2-T2K	CP, ROL	305-905	-5	Operational Com- mission, 275-308	170	
35	RP2-T2L	CP, ROL	305-905	-5	Operational Com- mission, 275-308	175	
36	RP2-T2M	CP, ROL	305-905	-5	Operational Com- mission, 275-308	180	
37	RP2-T2N	CP, ROL	305-905	-5	Operational Com- mission, 275-308	185	
38	RP2-T2O	CP, ROL	305-905	-5	Operational Com- mission, 275-308	190	
39	RP2-T2P	CP, ROL	305-905	-5	Operational Com- mission, 275-308	195	
40	RP2-T2Q	CP, ROL	305-905	-5	Operational Com- mission, 275-308	200	
41	RP2-T2R	CP, ROL	305-905	-5	Operational Com- mission, 275-308	205	
42	RP2-T2S	CP, ROL	305-905	-5	Operational Com- mission, 275-308	210	
43	RP2-T2T	CP, ROL	305-905	-5	Operational Com- mission, 275-308	215	
44	RP2-T2U	CP, ROL	305-905	-5	Operational Com- mission, 275-308	220	
45	RP2-T2V	CP, ROL	305-905	-5	Operational Com- mission, 275-308	225	
46	RP2-T2W	CP, ROL	305-905	-5	Operational Com- mission, 275-308	230	
47	RP2-T2X	CP, ROL	305-905	-5	Operational Com- mission, 275-308	235	
48	RP2-T2Y	CP, ROL	305-905	-5	Operational Com- mission, 275-308	240	
49	RP2-T2Z	CP, ROL	305-905	-5	Operational Com- mission, 275-308	245	
50	RP2-T3A	CP, ROL	305-905	-5	Operational Com- mission, 275-308	250	
51	RP2-T3B	CP, ROL	305-905	-5	Operational Com- mission, 275-308	255	
52	RP2-T3C	CP, ROL	305-905	-5	Operational Com- mission, 275-308	260	
53	RP2-T3D	CP, ROL	305-905	-5	Operational Com- mission, 275-308	265	
54	RP2-T3E	CP, ROL	305-905	-5	Operational Com- mission, 275-308	270	
55	RP2-T3F	CP, ROL	305-905	-5	Operational Com- mission, 275-308	275	
56	RP2-T3G	CP, ROL	305-905	-5	Operational Com- mission, 275-308	280	
57	RP2-T3H	CP, ROL	305-905	-5	Operational Com- mission, 275-308	285	
58	RP2-T3I	CP, ROL	305-905	-5	Operational Com- mission, 275-308	290	
59	RP2-T3J	CP, ROL	305-905	-5	Operational Com- mission, 275-308	295	
60	RP2-T3K	CP, ROL	305-905	-5	Operational Com- mission, 275-308	300	
61	RP2-T3L	CP, ROL	305-905	-5	Operational Com- mission, 275-308	305	
62	RP2-T3M	CP, ROL	305-905	-5	Operational Com- mission, 275-308	310	
63	RP2-T3N	CP, ROL	305-905	-5	Operational Com- mission, 275-308	315	
64	RP2-T3O	CP, ROL	305-905	-5	Operational Com- mission, 275-308	320	
65	RP2-T3P	CP, ROL	305-905	-5	Operational Com- mission, 275-308	325	
66	RP2-T3Q	CP, ROL	305-905	-5	Operational Com- mission, 275-308	330	
67	RP2-T3R	CP, ROL	305-905	-5	Operational Com- mission, 275-308	335	
68	RP2-T3S	CP, ROL	305-905	-5	Operational Com- mission, 275-308	340	
69	RP2-T3T	CP, ROL	305-905	-5	Operational Com- mission, 275-308	345	
70	RP2-T3U	CP, ROL	305-905	-5	Operational Com- mission, 275-308	350	
71	RP2-T3V	CP, ROL	305-905	-5	Operational Com- mission, 275-308	355	
72	RP2-T3W	CP, ROL	305-905	-5	Operational Com- mission, 275-308	360	
73	RP2-T3X	CP, ROL	305-905	-5	Operational Com- mission, 275-308	365	
74	RP2-T3Y	CP, ROL	305-905	-5	Operational Com- mission, 275-308	370	
75	RP2-T3Z	CP, ROL	305-905	-5	Operational Com- mission, 275-308	375	
76	RP2-T4A	CP, ROL	305-905	-5	Operational Com- mission, 275-308	380	
77	RP2-T4B	CP, ROL	305-905	-5	Operational Com- mission, 275-308	385	
78	RP2-T4C	CP, ROL	305-905	-5	Operational Com- mission, 275-308	390	
79	RP2-T4D	CP, ROL	305-905	-5	Operational Com- mission, 275-308	395	
80	RP2-T4E	CP, ROL	305-905	-5	Operational Com- mission, 275-308	400	
81	RP2-T4F	CP, ROL	305-905	-5	Operational Com- mission, 275-308	405	
82	RP2-T4G	CP, ROL	305-905	-5	Operational Com- mission, 275-308	410	
83	RP2-T4H	CP, ROL	305-905	-5	Operational Com- mission, 275-308	415	
84	RP2-T4I	CP, ROL	305-905	-5	Operational Com- mission, 275-308	420	
85	RP2-T4J	CP, ROL	305-905	-5	Operational Com- mission, 275-308	425	
86	RP2-T4K	CP, ROL	305-905	-5	Operational Com- mission, 275-308	430	
87	RP2-T4L	CP, ROL	305-905	-5	Operational Com- mission, 275-308	435	
88	RP2-T4M	CP, ROL	305-905	-5	Operational Com- mission, 275-308	440	
89	RP2-T4N	CP, ROL	305-905	-5	Operational Com- mission, 275-308	445	
90	RP2-T4O	CP, ROL	305-905	-5	Operational Com- mission, 275-308	450	
91	RP2-T4P	CP, ROL	305-905	-5	Operational Com- mission, 275-308	455	
92	RP2-T4Q	CP, ROL	305-905	-5	Operational Com- mission, 275-308	460	
93	RP2-T4R	CP, ROL	305-905	-5	Operational Com- mission, 275-308	465	
94	RP2-T4S	CP, ROL	305-905	-5	Operational Com- mission, 275-308	470	
95	RP2-T4T	CP, ROL	305-905	-5	Operational Com- mission, 275-308	475	
96	RP2-T4U	CP, ROL	305-905	-5	Operational Com- mission, 275-308	480	
97	RP2-T4V	CP, ROL	305-905	-5	Operational Com- mission, 275-308	485	
98	RP2-T4W	CP, ROL	305-905	-5	Operational Com- mission, 275-308	490	
99	RP2-T4X	CP, ROL	305-905	-5	Operational Com- mission, 275-308	495	
100	RP2-T4Y	CP, ROL	305-905	-5	Operational Com- mission, 275-308	500	

NOTE 1: RP pressure to be about 1000 psia.

NOTE 2: (a) Each coil 8.9, second will add a section of 210 lb. of water to pool.
(b) Each coil 8.9, second will increase 1.18 psi to 2.13 a maximum of 0.016 °F.

NOTE 3: Suppression pool cooling may be activated between selected tests to maintain bulk pool temp. as close to 85°F as desired.

CP = Coil Pipe
RP = Ref. Pipe
ROL = Reactor Level

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