

Position 19



OAK RIDGE NATIONAL LABORATORY

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UNION CARBIDE CORPORATION  
NUCLEAR DIVISION



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Packet Number 50 368

Mr. Leo Beltracchi  
Electrical Instrumentation & Control  
Systems Branch  
Division of Systems Safety  
Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555

Dear Mr. Beltracchi:

Subject: Audit of "CPC Dynamic Software Verification Field Test Procedure"

On June 28, 1978, a visit was made to the Systems Engineering Laboratories in Ft. Lauderdale, Florida, to witness a demonstration of the subject procedure. The procedure was dated June 23, 1978, (Rev. 0) and will be formally transmitted to NRC in the near future. A demonstration was conducted on Channel D to verify the results which have been previously obtained and formally logged by C.E. The logs were inspected and found to be consistent with the procedure except for one item. It was noted that step No. 7 requiring all disk numbers utilized during the test to be recorded in the test log had not been fully complied with. This was corrected by the test engineer as soon as it was pointed out that no entries were made for the DSVT program and DSVT input disk numbers.

An ad-hoc demonstration was conducted on Channel B with exact agreement with Channel D results on all five test cases.

It was explained that the DSVT program operates as an overlay in the region \$3000-\$3C80 and uses the area \$2000-\$2C80 as a data storage/buffer area. A check was made of the system check-sum values and it was noted that only the block 2 & 3 values were changed from the phase II audited system.

The values of the addressable constants in Channel B were requested and appear in table I on the following page. It was explained that only KCAL will vary from case to case.

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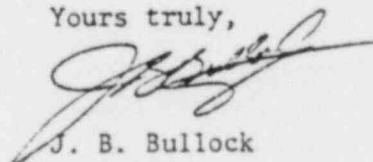
TABLE 1

CONSTANTS FOR DSVT CASE 17  
(Primary Depressurization)

<u>Pt. I.D.</u>	<u>Valve</u>
60	1.0
61	0
62	0
63	1.0
64	5.0
65	1.07
66	5.0
67	1.02
68	1.0
69	.99896 KCAL
70	0
71	1.0
72	1.0
73	1.0
74	1.0
75	1.0
76	1.0
77	1.0
78	6.574
79	-3.052
80	.535
81	-4.108
82	9.103
83	-4.108
84	.535
85	-3.052
86	6.574
87	1.1099
88	1.6384 x 10 <sup>4</sup>
89	0
90	0
91	0

In summary, the test was conducted in accordance with the procedure and the expected values shown in table III of the procedure were confirmed. The software and hardware environment was a duplicate of the ANO-2 CPC system. I have included the addressable constants for review by others since it is outside the scope of my review.

Yours truly,



J. B. Bullock