

Consumers
Power
Company

General Office, 212 West Michigan Avenue, Jackson, Michigan 49201 • Area Code 517 788-0550

January 29, 1974

Mr. John F. O'Leary, Director
Directorate of Licensing
US Atomic Energy Commission
Washington, DC 20545



Re: Docket 50-155
License DPR-6
Big Rock Point

Dear Mr. O'Leary:

Consumers Power Company's letter of December 4, 1973 provided additional information to the Regulatory Staff to allow further evaluation of the Technical Specifications governing testing of the Big Rock Point Liquid Poison System explosively actuated valves. In that letter, we described difficulties with a special test procedure that we were attempting to develop to periodically test the actuation circuitry. This letter is to inform you of the resolution of the difficulties with the special test procedure and to correct one error in the December 4, 1973 letter.

Our December 4, 1973 letter stated that a special test was performed on the actuation circuitry in November 1973, which involved replacing the primers with fuses. During the first attempts, the fuses did not all blow as expected. Subsequent attempts were successful. During December 1973, further testing was performed and the cause of the previously unexpected results determined.

Testing was performed with various sizes of fuses in place of the explosive valve primers. The fuse sizes varied from 1/2 amp to 2 amps in 1/2-amp increments. The circuit was energized and the fuses opened, simulating primer firing as follows:

<u>Fuse Size (Amp)</u>	<u>Approximate Time To Open (Seconds)</u>
1/2	Too fast to measure.
1	0.2
1-1/2	0.6
2	Circuit A - one fuse opened, others were glowing red. Test halted after 2.4 seconds. Circuit B - last fuse opened at 2.18 seconds. Current was measured in Circuit A at 15 amps maximum.

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The results of these tests were compatible with the capability of the installed circuitry. Measurements and analyses show the circuitry to be capable of supplying approximately 15 amps to the seven primers in parallel. The six remaining unopened 2-amp fuses in Circuit A probably would have opened if the circuit had remained energized longer.

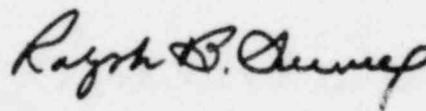
Based on these test results, the Big Rock Point Plant Staff is implementing a test of the liquid poison system control circuits, utilizing 1-1/2-amp fuses in place of the primers. This test will be performed at each major refueling outage. Test actuation of the 1-1/2-amp fuses will ensure that adequate current will be provided to fire the explosive primers. The specified maximum current required for firing a primer is 1 amp and tests have shown that the primers are detonated with the application of approximately 1/2 amp. In addition, administrative controls will be incorporated such that the hand switch be held in the firing position for five seconds. The actuation circuits do not seal-in and rapid switching could prevent valve firing.

Further analysis of the poison system control circuit malfunction alarm showed it to be functioning as intended. The control circuit failure alarm is provided to indicate an open circuit condition that is assumed to occur during normal plant operation.

The poison system control circuit alarm was not intended to provide meaningful information if the control circuit is actuated and in this case is misleading. If actuation is attempted and all primers detonate, a malfunction alarm is received. If actuation is attempted and none or some primers detonate, no malfunction alarm is received.

The December 4, 1973 letter also contained a statement that was erroneous. The December 4 letter stated "... the valves that experience the highest temperatures will not be in service for periods exceeding one year." Section 5.2.3 requires that the two valves that experience the highest temperatures be removed from service for testing at least every two years.

Yours very truly,



Ralph B. Sewell
Nuclear Licensing Administrator

RBS/map

CC: JGKepler, USAEC

FROM: Consumers Power Company Jackson, Michigan 49201 R. B. Sewell		DATE OF DOC 1-29-74	DATE REC'D 2-1-74	LTR X	MEMO	RPT	OTHER
TO: J. F. O'Leary		ORIG 1 signed	CC	OTHER	SENT AEC PDR X SENT LOCAL PDR X		
CLASS	UNCLASS XXX	PROP INFO	INPUT	NO CYS REC'D 40	DOCKET NO: 50-155		

DESCRIPTION:
Ltr re their 12-4-74 ltr.....furnishing a resolution of the difficulties with the special test procedure and to correct one error.....

PLANT NAME: Big Rock

ENCLOSURES:

DO NOT REPLY

ACKNOWLEDGED

FOR ACTION/INFORMATION 2-4-74 GC

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