

CONSUMERS POWER COMPANY
Docket 50-155
Request for Change to the Technical Specifications
License DPR-6

For the reasons hereinafter set forth, it is requested that the Technical Specifications contained in the Facility Operating License DPR-6, Docket 50-155, issued to Consumers Power Company on May 1, 1964, for the Big Rock Point Plant be changed as described in Section I below:

I. CHANGES

Section 11.3.5.3 and 11.4.5.3

Add the Alternate Shutdown Battery System to the specification for Emergency Power Sources as follows:

11.3.5.3 EMERGENCY POWER SOURCES

"A. For all reactor operating conditions except cold shutdown, there shall normally be available one 138 kV line, one 46 kV line, one diesel generator system, one station battery system, four RDS uninterruptible power supplies including batteries and one alternate shutdown battery system, except as specified below:"

"A. 5. The station battery system and the alternate shutdown battery system shall be operable under all conditions except during cold shutdown. If the station battery or the alternate shutdown battery is inoperable, no actions shall be taken which result in a reactivity addition, except cooldown, or which might result in the primary coolant system being drained."

11.4.5.3 EMERGENCY POWER SOURCES

"A. 1.(e) Verify the cells, cell plates, and battery racks show no visual indication of physical damage or abnormal deterioration for the station battery, the RDS batteries and the alternate shutdown battery.

A. 1.(f) Verify the cell-to-cell and terminal connections are clean, tight, free of corrosion and coated with anti-corrosion material for the station battery the RDS batteries, and the alternate shutdown battery."

"A. 1.(h) Verify that the capacity of the station battery, the RDS batteries and the alternate shutdown battery is adequate to supply and maintain in OPERABLE status all of the actual emergency loads for the design time interval when the battery is subjected to a battery service test. The design time interval for the RDS batteries is one hour,

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eight hours for the station battery and eight hours for the alternate shutdown battery."

"A. 2.(b) Verify that the cell voltage is ≥ 2.0 volts and specific gravity is ≥ 1.2 of each cell of the station battery; and verify that the cell voltage is ≥ 6.0 volts and specific gravity is ≥ 1.2 on each cell of the RDS batteries; and verify that the cell voltage is ≥ 2.1 volts and specific gravity is ≥ 1.2 of each cell of the alternate shutdown battery."

"A. 3.(a) Verify the electrolyte level of each RDS battery pilot cell, the station battery pilot cell and the alternate shutdown battery pilot cell is between the minimum and maximum level indication marks.

(b) Verify the pilot cell specific gravity for RDS, station and alternate shutdown batteries corrected to $(77)^{\circ}\text{F}$, is ≥ 1.2 .

(c) Verify the station battery pilot cell voltage is ≥ 2.0 volts. The RDS battery pilot cell voltage is ≥ 6.0 volts. The alternate shutdown battery pilot cell voltage is ≥ 2.1 volts.

(d) Verify the overall battery voltage is ≥ 125 volts for the station battery, the RDS batteries and the alternate shutdown battery."

"A. 5 Sixty Months - At least once per 60 months during shutdown, verify that the RDS batteries, the alternate shutdown battery and the station battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. This performance discharge test shall be performed subsequent to the satisfactory completion of the required battery service test of Part 11.4.5.3.A.1.(h)."

Bases for Section 11.3.5.3 and 11.4.5.3

Add the following:

"An alternate shutdown battery supplies power to the main steam isolation valve, the emergency condenser outlet valves and other alternate shutdown equipment. The battery is sized such that loss of the charger does not affect operability of the battery for up to six (6) days at a minimum of 25°F (nine (9) days at minimum of 40°F)."

Section 3/4/7.13

Add the following specification and bases for the alternate shutdown system as follows:

"PLANT SYSTEMS3/4.7.13 ALTERNATE SHUTDOWN SYSTEMLIMITING CONDITIONS FOR OPERATION

3.7.13 The alternate shutdown system (ASD) equipment shown in Table 3.3.9 shall be operable.

APPLICABILITY

During power operation.

ACTION

- a. With any item, other than the #1 control rod drive pump power or the two emergency condenser indicating lights, in Table 3.3.9 inoperable, either restore to operable status within seven days or a normal orderly shutdown shall be initiated within one (1) hour and the reactor shall be shutdown as described in Section 1.2.5(a) within 12 hours and shutdown as described in Section 1.2.5(a) and (b) within the following 24 hours.
- b. With the #1 control rod drive pump power or either of the two emergency condenser indicating lights inoperable, either restore to operable status within sixty days or a normal orderly shutdown shall be initiated within one (1) hour and the reactor shall be shutdown as described in Section 1.2.5(a) within 12 hours and shutdown as described in Section 1.2.5(a) and (b) within the following 24 hours.

SURVEILLANCE REQUIREMENTS

- 4.7.13.1 The ASD monitoring instruments shall be demonstrated OPERABLE by performing a check and a calibration per Table 4.3-9.
- 4.7.13.2 Each transfer switch, power supply and control circuit shall be demonstrated OPERABLE at least once per 18 months by operating each actuated component from both the control room and the remote location."

"TABLE 3.3-9

ALTERNATE SHUTDOWN SYSTEM EQUIPMENT

INSTRUMENT	READOUT LOCATION
1. Steam Drum Level/LI-6819	Panel C31
2. Steam Drum Pressure/PI-6819	Panel C31
3. Emergency Condenser Low Level Alarm Indicating Light/LS-3550	Panel C31
4. Emergency Condenser Firewater Makeup Flow Indicating Light/FS-4947	Panel C31

TRANSFER SWITCHES/POWER SUPPLIES/CONTROL CIRCUITS	SWITCH LOCATION
1. Emergency Condenser Outlet Valve Control MO-7053	MO-7053 Motor Starter
2. Emergency Condenser Outlet Valve Control MO-7063	MO-7063 Motor Starter
3. Main Steam Isolation Valve Control MO-7050	MO-7050 Motor Starter
4. ECS Firewater Makeup Valve Control SV-4947	Panel C31
5. Control Rod Drive Pump No. 1 Power	Equipment Lock"

"TABLE 4.3.-9

ALTERNATE SHUTDOWN SYSTEM INSTRUMENT SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>SURVEILLANCE</u>	<u>FREQUENCY</u>	<u>METHOD</u>
1. Steam Drum Level, LI-6819	A. Check	Quarterly	compare to known level
	B. Calibration	Every 18 months	apply known differential pressures to transmitters
2. Steam Drum Pressure, PI-6819	A. Check	Quarterly	compare to known pressure
	B. Calibration	Every 18 months	apply known pressures to transmitter
3. Emergency Condenser Makeup Line Flow Switch Indicating Light, FS-4947	A. Check	Quarterly	initiate flow in line
	B. Calibration	Every 18 months	apply known flow through flow switch
4. Emergency Condenser Low Level Alarm Indicating Light, LS-3550 (Panel C31)	A. Check	Quarterly	simulate low level
	B. Calibration	Every 18 months	apply known differential pressure to switch

BASES3/4.7.13 ALTERNATE SHUTDOWN SYSTEM

The requirements for the Alternate Shutdown System provide assurance that safe shutdown and cooldown to approximately 212°F can be achieved in the event of major fire in critical areas of the plant. This capability is in accordance with the criteria of Appendix R to 10 CFR 50."

II. DISCUSSION

These changes add operability and surveillance requirements for components of alternate shutdown system installed in accordance with Appendix R to 10 CFR 50. System design was reviewed and approved as discussed in the NRC Safety Evaluations dated March 8, 1983 and March 26, 1985. The requirements are based on applicable portions of draft standard Technical Specifications. The equipment represents the minimum required to reach safe "hot" shutdown conditions for a fire that destroys the normal systems. The equipment required to reach "cold" shutdown was not included in the proposal for the following reasons:

1. The equipment included in this proposal is adequate to provide assurance that safe "hot" shutdown of the reactor can be achieved and maintained indefinitely in accordance with the requirements of Appendix R. This involves the use of the main steam isolation valve to limit any primary system leakage, the emergency condenser to cooldown the system, and a control rod drive pump to provide makeup to the primary system. At Big Rock this condition is very stable. The reactor can be maintained in safe shutdown status indefinitely under these circumstances.
2. The proposed operability and surveillance requirements are for the most part compatible with existing Technical Specification requirements for the equipment involved (for example, as explained later, the battery surveillance requirements proposed exceed the recommendations of the draft Standard Technical Specification for Appendix R.)
3. The ability to take the plant from the "hot" shutdown condition described above to the "cold" shutdown condition (temperature $<212^{\circ}\text{F}$) is required by Appendix R. Modifications are being performed, procedures are being prepared, and complete preoperational acceptance testing of the equipment needed to meet this requirement will be done before startup from the current refueling outage.
4. This "cold" shutdown equipment, namely, alternate power sources for a shutdown cooling system pump, reactor coolant water pump, fuel pit pump, control rod drive booster pump, and a service water pump, provides very little added margin of safety in performing its function. This equipment is provided merely to lower the temperature of the primary system from just above the boiling point to below the boiling point.
5. The "cold" shutdown equipment listed does not currently have any operability requirements in the Big Rock Point Technical Specifications.

It would be inconsistent to add operability requirements for equipment that has very little importance to nuclear safety. In each case, if the equipment were to fail, the ability to maintain safe "hot" shutdown (approximately 212°F) indefinitely is not affected, therefore time would be available to repair any defective component.

6. It would be beyond the requirements of Appendix R to assume that the emergency condenser will fail at the time of the design basis fire - Appendix R does not require consideration of unrelated single failures concurrent with a fire and loss of offsite power.

Based on these reasons, it is considered inconsistent and inappropriate to include operability or surveillance requirements for listed "cold" shutdown equipment in the Technical Specifications.

The control rod drive pump operability requirement is listed as sixty days, not seven days. This is due to the fact that an alternate method of makeup to the primary system is already available from the fire system by manually operating core spray valves inside containment. This alternative is included in the operating procedures for the alternate shutdown system and can be relied on during any time the pump itself is inoperable. (If the normal power supply were inoperable, but the pump itself was ready for service, the alternate shutdown method would still be considered operable.) This therefore follows the guidance of the draft Standard Technical Specifications. Note that under the conditions of loss of the ability to open the core spray valves remotely from outside containment, with no other source of makeup available to the primary system the RDS system would be inhibited as long as the core spray system is inoperable. Inhibiting the RDS under these conditions is consistent with existing Technical Specification Section 3.1.5 which requires operability of the core spray system prior to RDS actuation.

The emergency condenser makeup line flow switch and low level alarm indicating lights are also listed with sixty day operability requirements. The loss of these indicating lights in no way affects the ability of the system to provide makeup to the shell of the emergency condenser. They provide information to assess the need for makeup and the actual makeup flow. Without either of these lights operable, the function can still be performed by entering containment and checking the sight glass at the emergency condenser. It is also known that makeup is required within four hours and that lack of makeup would cause the primary system to eventually repressurize, of which indication is available. As these backup measures are available, it is appropriate to include these items under the sixty day requirements.

The alternate shutdown system battery was not put in Standard Technical Specification format as was Section 3/4.7.13. It replaces the station battery as the power source for the main steam isolation valve and emergency condenser outlet valves, and therefore requires more restrictive requirements than those of Appendix R. The surveillance requirements are consistent with the existing station battery requirements and with applicable IEEE Standards for Class 1E battery installations.

The battery is sized to allow several days following loss of the charger before it would no longer be able to support the equipment operations required for alternate safe shutdown. Therefore the function of the

charger is not critical to the Class 1E function of the battery and is not added to the Technical Specifications.

Note that the eight hour design time interval listed (to be consistent with station battery requirements) is in reality far exceeded during the actual service test. This test is designed to simulate the load profile that would exist under the Appendix R assumptions (minimum of nine days without a charger followed by seventy-two hours of alternate shutdown loads). This twelve (12) day load profile is condensed into an equivalent eight (8) hour load test. (In other words, a service test is not required by Appendix R, but the eight (8) hour test that is done simulates the more extensive Appendix R loads, exceeding both Class 1E and Appendix R requirements.)

III. Analysis of No Significant Hazards Considerations

This change adds operability and surveillance requirements for equipment required to operate to assure a safe method of cooling the primary system, in the event of a fire. This proposed change (and associated modifications as previously approved in NRC Safety Evaluations dated March 8, 1983 and March 26, 1985) decreases significantly the consequences of a design basis fire.

The alternate shutdown system battery replaces the station battery as the power source for the main steam isolation valve, and emergency condenser outlet valves. The design and operability requirements of this battery system are consistent with those of the station battery currently addressed by the Big Rock Point Technical Specifications, thus not increasing the probability or consequences of an accident previously evaluated.

The proposed changes are consistent with current Big Rock Point Technical Specifications and do not create the possibility of a new or different kind of accident from any accident previously evaluated.

Existing Technical Specification operability and surveillance requirements have in no case been reduced by the proposed change. Only additional operability and surveillance requirements are added for safe shutdown equipment, thus no margins of safety will be reduced with issuance of this proposed change. Consequently, this proposed change does not involve a significant hazards consideration.

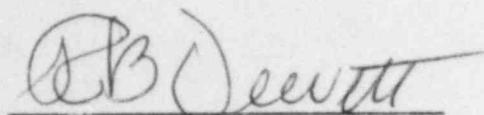
IV. Conclusion

The Big Rock Point Plant Review Committee has reviewed this Technical Specification Change Request and has determined that this change does not involve an unreviewed safety question and therefore involves no significant hazards consideration. This change has also been reviewed

under the cognizance of the Nuclear Safety Board. A copy of this Technical Specification Change Request has been sent to the State of Michigan official designated to receive such Amendments to the Operating License.

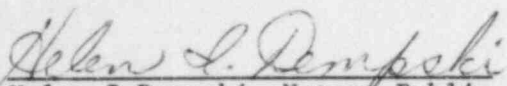
CONSUMERS POWER COMPANY

By



R B DeWitt, Vice President
Nuclear Operations

Sworn and subscribed to before me this 30th day of September 1985.



Helen I Dempski, Notary Public
Jackson County, Michigan

My commission expires October 12, 1987.