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 3.4.2(f)

Add the following to the first sentence after..."signal", "or on high radiation at either of two area monitors in the fuel storage area."

Delete the last sentence of this section.

Section 4.1.2(a) Safety Relief Valves

Add the following wording:

"Acoustic Position Monitors" "6"

Section 4.1.2(b) Operating Requirements

Add the following wording after "...is not exceeded.",

"At least three (3) steam drum safety valve position monitors shall be operable during power operation. Also, one of every two (2) adjacent monitors oriented in each north-south plane shall be operable."

Section 6.4

Replace the existing wording with, "The plant monitoring systems include the process radiation monitoring systems, the area monitoring system, and the reactor water level monitors in the Reactor Depressurizing System."

Section 6.4.2(b)

Add the following wording after "...provisions of 10CFR 70.",

"Either of these two monitors is capable of tripping the ventilation valves closed during power operation or fuel handling activities."

Section 6.4.2(d)

Add a new section (d) as follows:

"(d) Four narrow range water level monitors are provided in the main control room as part of the Reactor Depressurizing System to be used for detection of

adequate core cooling during accident situations."

Section 6.4.3(g)

Add a new section (g) as follows:

"(g) At least two reactor water level indicators in the Reactor Depressurizing System shall be operable during power operation."

Section 7.6

Add to the table as follows:

System or Function Undergoing Test	Frequency of Routine Tests	Technical Specification Reference Section
"High Radiation Trip Closure of the Containment Ventilation Isolation Valves"	"At Each Major Refueling Shutdown"	"6.4.1"
"Channel Comparison Check of Reactor Level Indicating Instruments in the Reactor Depressurizing System"	"One Month or Less"	"6.4.3"
"Calibration of Reactor Level Indicating Instruments in the Reactor Depressurizing System"	"At Each Major Refueling Shutdown"	"6.4.3"

(page changes attached)

II. Discussion

The above proposed Technical Specifications changes are requested in response to NRC letter dated July 2, 1980. The changes are associated with actions taken by Consumers Power Company in response to the Category "A" items of the Commission's recommendations resulting from TMI-2 Lessons Learned.

NRC letter dated July 2, 1980 provided proposed specifications in Standard Technical Specifications format to define system designs, limiting conditions of operation and associated actions and surveillance requirements for (1) Emergency Power Supply/Inadequate Core Cooling, (2) Valve Position Indication and (3) Containment Isolation. The proposed change request addresses these topics in current Big Rock Point Technical Specifications format.

III. Conclusion

Based on the foregoing, both the Big Rock Point Plant Review Committee and the Safety and Audit Review Board have reviewed these changes and find them acceptable.

CONSUMERS POWER COMPANY

By R B DeWitt 9/25
R B DeWitt, Vice President
Nuclear Operations

Sworn and subscribed to before me this 25th day of September 1980.

Linda K Carstens
Linda K Carstens, Notary Public
Jackson County, Michigan
My commission expires June 10, 1981.

3.4.2 (Contd)

closes automatically whenever necessary to prevent outward flow in the event of an accident. Except for check valves, both valves shall be capable of being closed by manual initiation from either the control room or from other stations that would be tenable after an accident.

(c) Lines open to the reactor vessel or any portion of the reactor recirculating loop are treated in the manner described in the previous paragraph, with the added feature that the two valves shall be on opposite sides of the shell of the containment sphere.

(d) Lines normally closed have only a single valve. A lock, interlock, or operating rules shall insure that this valve is closed whenever containment integrity is required.

(e) Certain lines enter and leave the containment sphere without any openings to the containment sphere free volume. Others leave and return to the containment sphere without any openings to the atmosphere. Such lines shall not require isolation valves, provided the lines are not in danger of being broken as a result of a reactor system rupture.

(f) The two 24-inch ventilation openings, one for supply and one for exhaust, shall be designed to close within six seconds after any scram signal or on high radiation at either of two area monitors in the fuel storage area. In order to prevent the possibility of excessive external pressure on the containment sphere due to atmospheric changes, the two valves in the ventilation supply line shall be automatically opened whenever the differential pressure exceeds 1 psi, overriding all other signals. The valves shall reclose when the internal pressure is still slightly below atmospheric.

3.4.3 Operating Requirements

(a) Normally open lines, carrying fluids out of the containment sphere, shall be closed automatically upon a signal indicating high containment sphere pressure or low-water level in the reactor vessel. These automatic isolation valves shall also close upon instrument air or power failure, and upon manual trip from the control room.

(b) Normally open lines, carrying fluids into the containment sphere, shall be equipped with check valves to prevent backflow upon loss of inward propellent force. In addition, these lines shall be capable of being secured by manually operated gate valves or by air-operated control valves. The latter shall close upon air or power failure, with exception

4.1.2 (Contd)

Recirculating Valves, Each Loop:

Location	Type	Mode of Operation	Size Inches	Opening Rate Inches/Minute
Pump Suction	Gate	Motor	24	12
Pump Discharge	Gate	Motor	20	5
Pump Discharge Bypass Valve	Gate	Motor	5	12
Pump Discharge	Butterfly	Electrically Disabled and Locked in the Full Open Position		

Recirculation System Piping:

Location	Size	Number	Material
Risers	14" x 0.712 Wall	6	316 Stainless Steel (SS)
Downcomers	17" x 0.858 Wall	4	316 SS
Pump Suction	24" x 1.21 Wall	2	316 SS
Pump Discharge	20" x 1.009 Wall	2	316 SS

Safety Relief Valves:

Number	6
Type	Spring-Loaded
Maximum Setting of First Valve Including Rupture Disc, Psia	1700
Sequential Pressure Increment Setting of Remaining Valves, Psi	10
Minimum Capacity per Valve (1202 Psia Setting), Pounds per Hour	2.36×10^5
Valve Orifice Area, Square Inch	3.976
Acoustic Position Monitors	6

4.1.2 (Contd)

Minimum Time To Put System in Full Operation Following Signal, Seconds	30

Core Spray System:

Type	Sparger Ring With Spray Nozzle
Capacity of Sprays, Gpm	400
Nozzle Pressure, Psia	115

Backup Core Spray System:

Type	Sparger Nozzle Centered Over Core
Capacity of Sparger, Gpm	470
Nozzle Pressure, Psia	115

Core Spray System Recirculation:

Number Pumps	2
Number Heat Exchanger	1
Heat Removal Capacity, Btu/h @ 28.4°F Log Mean Temperature Difference	8×10^6

(b) Operating Requirements

A minimum of one reactor recirculating loop shall be used during all reactor power operations (ie, recirculating pump suction valve and 20" discharge valve shall remain open and pump shall be running). The maximum operating pressure and temperature shall be the same as the reactor vessel. The controlled rate of change of temperature in the reactor vessel shall be limited to 100°F per hour. All other components in the system shall be capable of following this temperature change rate. The safety relief valves shall be set appropriately for all planned reactor operating pressures so that the allowable pressure of 1870 psia (1700 plus 10%) in the nuclear steam supply system is not exceeded. At least three (3) steam drum safety valve position monitors shall be operable during power operation. Also, one of every two (2) adjacent monitors oriented in each north-south plane shall be operable. The emergency condenser shall be operable and ready for service at all times during power operation. However, should one emergency condenser tube bundle develop a leak during power operation, it will be permissible to isolate the leaking tube bundle until the next outage. Both bundles of the emergency condenser shall be available for service during cold to hot plant heatup for power production. The shutdown cooling system shall be ready for service during power operations with the 480 volt circuit breakers for isolation valves MO-7056, MO-7057, MO-7058 and MO-7059 checked "open" when reactor pressure is above 300 psig. The shutdown cooling system shall be operable and ready for service during refueling operations and the breakers for MO-7070 and MO-7071 shall be tagged "open". The primary coolant shall be sampled and analyzed daily during

6.3.2 Refueling Operation Controls

Interlocks shall be provided to prevent all motion with any of the refueling cranes (namely, jib cranes, transfer cask winch) which are positioned over the reactor vessel whenever any control rod is not fully inserted in the core and the mode selector switch is in the "refuel" position.

6.3.3 Operating Requirements

(a) All reactor refueling safety system sensors and trip devices shall be functionally tested at each major refueling shutdown and shall be maintained in the specified condition during all refueling operations.

(b) The refueling operation controls including position interlocks shall be functionally tested at each major refueling shutdown.

6.4 PLANT MONITORING SYSTEMS

The plant monitoring systems include the process radiation monitoring systems, the area monitoring system, and the reactor water level monitors in the Reactor Depressurizing System.

6.4.1 Process Radiation Monitoring Systems

The process radiation monitoring systems consist of the air ejector off-gas monitoring system including the fuel rupture detection system; stack-gas monitoring system, the emergency condenser vent monitor, and process liquid monitor system.

(a) Air Ejector Off-Gas Monitoring Systems

Continuous monitoring of the air ejector off-gas radioactivity shall be provided by either two ion chamber type systems or two single-channel gamma scintillation spectrometer systems designed to detect noble gas fission products indicative of a fuel element rupture. One system (either ion chamber or scintillation detector) will always be in service with an identical system as an operational spare. The sampling system shall be designed to hold up the the gas sample to allow time for the decay of Nitrogen-16 and other short-lived activation gases. The off-gas monitoring channels shall be calibrated so that the indicated and recorded count rate output of the channel in service, combined with the off-gas flow, permits determination of

6.4.2 (Contd)

(b) Two of these nineteen area monitors shall be located in the vicinity of the fuel storage areas to provide gamma monitoring of the fuel storage areas and refueling operations. Local alarms shall be provided for these monitors, and alarm settings shall be in accordance with the provisions of 10 CFR 70. Either of these two monitors is capable of tripping the ventilation valves closed during power operation or fuel handling activities.

However, notwithstanding the requirements of Section 70.24(a)(1), alarm settings may be raised above 20 mR/hr as long as the overall detection criterion in Section 70.24(a)(1) is satisfied and the requirements specified in paragraph 6.4.3(e) below are met.

(c) At least five environmental film monitoring stations shall be provided for determining the integrated gamma dose rate in the site environs. These stations shall be placed on an arc of about 1,350 meters from the stack.

(d) Four narrow range water level monitors are provided in the main control room as part of the Reactor Depressurizing System to be used for detection of adequate core cooling during accident situations.

6.4.3 Operating Requirements

(a) At least one of the two air ejector off-gas monitoring systems shall be in service during power operation and set to initiate closure of the off-gas isolation valve as described below. Alarms normally shall be set to annunciate in the control room if the off-gas radioactivity reaches a level that corresponds to a stack release of 0.1 curie per second. At stack releases above 0.1 curie per second, the alarm shall be set approximately a factor of two above the expected off-gas release rate but in no event above that level corresponding to a stack release of $\frac{0.47}{\bar{E}}$ curie per second where $\bar{E}$ is the average gamma energy per disintegration (MEV/dis). If the limit of $\frac{0.47}{\bar{E}}$ curie per second is exceeded, reactor power shall be immediately reduced such as to meet the limits. The monitors shall be set to initiate closure of the off-gas isolation valve (after a time adjustable from 0 to 15 minutes) if the off-gas radioactivity reaches a level that would correspond to a stack release rate of ten curies per second. Off-gas samples shall be taken monthly during power operation and analyzed for calibration of the off-gas radiation monitors. The automatic closure function of the monitors shall be tested monthly during power operation.

(b) The stack-gas monitoring system shall normally be in service. Adequate spare parts shall be on hand to allow necessary repairs to be made promptly. The alarm normally shall be set to annunciate in the control room at a level that corresponds to a stack release rate of 0.1 curie per second. At stack release

6.4.3 (Contd)

rates above 0.1 curie per second, the alarm shall be set approximately a factor of two above the expected stack release rate, but in no event above $\frac{0.47}{E}$ curies per second.

The calibration of the system shall be checked at least monthly. The particulate filter and iodine filter shall be analyzed at least weekly.

(c) One of the emergency condenser vent monitors shall be in service at all times during power operation. The monitors shall be set to alarm at approximately 10 mR above the maximum expected background during operation of the emergency condenser. The calibration shall be checked at least monthly.

(d) The process liquid monitors shall normally be in service. Adequate spare parts shall be on hand to allow necessary repairs to be made promptly. Alarms shall be set as specified in Section 6.4.1 (d). Calibration of the "Radioactive Waste System Effluent to Canal" monitor shall be checked at least once a month. Calibration of the remaining monitors shall be checked at least once every three months. Each day an analysis shall be made of the previous 24-hour collection of discharge canal water.

(e) The area monitoring system shall normally be in operation; however, individual monitors may be taken out of service for maintenance and repairs. Adequate spare parts shall be on hand to allow necessary repairs to be made promptly. During monitor outages in normally accessible areas, temporary monitoring shall be provided if the remaining area monitors do not provide adequate coverage. Calibration of monitors shall be checked at least monthly. Alarm trip points shall be set at a radiation level approximately twice the normal maximum indicated radiation level, but normally not less than one decade above the lowest scale reading.

Two films, each with a minimum sensitivity of 10 mR, shall be provided at each site environmental monitoring station. During operation at stack release rates of 0.1 curie per second or less, at least five monitoring stations shall be provided.

The films at each station shall be replaced and analyzed at least monthly.

Operation at stack release rates above 0.1 curie per second shall not exceed 48 hours without at least fifteen film monitoring stations in service. Two of these stations shall be on-site near the stack. The remaining additional stations shall complement the permanent stations but shall be located at greater distances from the stack. One film at each station shall be replaced and analyzed at least every two weeks.

6.4.3 (Contd)

The second film shall be replaced and analyzed monthly.

Under all stack release conditions, the film processor shall be instructed to report within 24 hours on all films that might indicate abnormal exposures.

(f) Gamma dose rate measuring instruments and neutron dose rate measuring instruments shall be provided for establishing permissible working limits. These instruments will be routinely repaired by qualified personnel. The instruments shall be calibrated at lease once every three months.

(g) At least two reactor water level indicators in the Reactor Depressurizing System shall be operable during power operation.

7.6 (Contd)

System or Function Undergoing Test	Frequency of Routine Tests	Technical Specification Reference Section
Control Rod Withdrawal Permissive Interlocks Function	Not less Frequently Than Once Every 12 Months The Refueling Interlocks Will Be Functionally Tested Prior to Each Major Refueling	6.2.2
Refueling Operation Controls Function	At Each Major Refueling Shutdown	6.3.3
High Radiation Trip Closure of the Containment Ventilation Isolation Valves	At Each Major Refueling Shutdown	6.4.1
Calibration and functional Test of Air Ejector Off-Gas and Stack-Gas Monitors	One Month or Less	6.4.3
Calibration of Emergency Condenser Vent Monitors	One Month or Less	6.4.3
Calibration of Process Liquid Monitors	One Month or Less (Effluent to Canal Monitor) Three Months or Less (Remaining Monitors)	6.4.3
Calibration of Area Monitoring System	One Month or Less	6.4.3
Channel Comparison Check of Reactor Level Indicating Instruments in the Reactor Depressurizing System	One Month or Less	6.4.3
Calibration of Reactor Level Indicating Instruments in the Reactor Depressurizing System	At Each Major Refueling Shutdown	6.4.3

Proposed