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

May 22, 1984

Docket No. 50-255
LS05-84-05-035

Mr. David J. VandeWalle
Nuclear Licensing Administrator
Consumers Power Company
1945 West Parnall Road
Jackson, Michigan 49201

Dear Mr. VandeWalle:

SUBJECT: TECHNICAL SPECIFICATION CHANGES RELATED TO ENGINEERED SAFETY FEATURE FILTERS

Re: Palisades Plant

The Commission has issued the enclosed Amendment No. 81 to Provisional Operating License No. DPR-20 for the Palisades Plant. This amendment is in response to your application dated August 30, 1982 as supplemented November 5, 1982.

This amendment modifies the operability and testing requirements for the control room and fuel building ventilation filters and replaces the requirement for containment purge filters with a requirement for hydrogen recombiners.

As discussed in Section 3.1.2 of the enclosed safety evaluation, the staff will require that a bypass flow test be performed when the new ventilation filter system for the control room becomes operational. It is our understanding that this system will be operable by startup from the current outage scheduled for early June 1984. Therefore, we request that you propose a technical specification within 60 days of the receipt of this letter that will require periodic verification that the bypass flow for the control room filtration system is within acceptable limits.

A Notice of Consideration of Issuance of Amendment to License and Proposed No Significant Hazards Consideration Determination and Opportunity for Hearing related to the requested action was published in the Federal Register on November 22, 1983 (48 FR 52810). No request for hearing was received and no comments were received.

SE01 1/1 Ext(04)

Add: T. Bernhart 4Cys
Connie (KM-314) 4Cys

A copy of our related Safety Evaluation is also enclosed. This action will appear in the Commission's Monthly Notice publication in the Federal Register.

Sincerely,

for Walter A. Paulson, Project Manager
Operating Reactors Branch #5
Division of Licensing

Enclosures:
1. Amendment No. 81 to License No. DPR-20
2. Safety Evaluation

cc w/enclosures:
See next page

A copy of our related Safety Evaluation is also enclosed. This action will appear in the Commission's Monthly Notice publication in the Federal Register.

Sincerely,

Original signed by James Lyons
for
Walter A. Paulson, Project Manager
Operating Reactors Branch #5
Division of Licensing

Enclosures:
1. Amendment No. 81 to License No. DPR-20
2. Safety Evaluation

cc w/enclosures:
See next page

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Mr. David J. VandeWalle

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

CONSUMERS POWER COMPANY

DOCKET NO. 50-255

PALISADES PLANT

AMENDMENT TO PROVISIONAL OPERATING LICENSE

Amendment No. 81
License No. DPR-20

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Consumers Power Company (the licensee) dated August 30, 1982 as supplemented November 5, 1982, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public; and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and Paragraph 3.B of Provisional Operating License No. DPR-20 is hereby amended to read as follows:

   B. Technical Specifications

   The Technical Specifications contained in Appendices A and B (Environmental Protection Plan), as revised through Amendment No. 81, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

for D. E. Jones

Dennis M. Crutchfield, Chief
Operating Reactors Branch #5
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 22, 1984

ATTACHMENT TO LICENSE AMENDMENT NO. 81

PROVISIONAL OPERATING LICENSE NO. DPR-20

DOCKET NO. 50-255

Revise Technical Specifications by removing the following pages and inserting the enclosed pages. The revised pages contains the captioned amendment number and marginal lines indicating the area of change.

REMOVE	INSERT
ii	ii
--	3-40a
3-47	3-47
3-48	3-48
3-49	3-49
3-69	3-69
3-70	3-70
4-11	4-11
4-13	4-13
4-15	4-15
4-15a	4-15a
4-15b	4-15b
--	4-15c
--	4-15d
--	4-15e

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3.6.4 Two independent containment hydrogen recombiners shall be operable when the reactor is at power or at hot standby. With one hydrogen recombiner system inoperable, restore the inoperable system to operable status within 30 days or be in at least hot shutdown within the next 12 hours.

3.8 REFUELING OPERATIONS (Contd)

g. During reactor vessel head removal and while refueling operations are being performed in the reactor, the refueling boron concentration shall be maintained in the primary coolant system and shall be checked by sampling on each shift.

h. Direct communication between personnel in the control room and at the refueling machine shall be available whenever changes in core geometry are taking place.

3.8.2 If any of the conditions in 3.8.1 are not met, all refueling operations shall cease immediately, work shall be initiated to satisfy the required conditions and no operations that may change the reactivity of the core shall be made.

3.8.3 Refueling operation shall not be initiated before the reactor core has decayed for a minimum of 48 hours if the reactor has been operated at power levels in excess of 2% rated power.

3.8.4 The ventilation system and charcoal filter in the fuel storage building shall be operating whenever irradiated fuel which has decayed less than 30 days is being handled by either of the following operations:

a. Refueling operation with the equipment door open, or

b. Fuel handling in the fuel storage building.

If both fans are unavailable, any fuel movements in progress shall be completed and further fuel movements over the spent fuel storage pool shall be terminated until one fan is returned to service.

3.8.5 When spent fuel which has decayed less than one year is placed in the tilt pit storage racks, the bulk water temperature in the tilt pit storage area must be monitored continuously to assure that the water temperature does not exceed 150°F. Monitoring will continue for 24 hours after any addition of fuel to the main pool or the tilt pit or when a failure of the spent fuel pool cooling system occurs.

Basis

The equipment and general procedures to be utilized during refueling are discussed in the FSAR. Detailed instructions, the above specifications, and the design of the fuel handling equipment incorporating built-in interlocks and safety features provide assurance that no incident could occur during the refueling operations that would result in a hazard to public health and safety.(1) Whenever changes are not being made in core geometry, one flux monitor is sufficient. This

permits maintenance of the instrumentation. Continuous monitoring of radiation levels and neutron flux provides immediate indication of an unsafe condition. The shutdown cooling pump is used to maintain a uniform boron concentration.

The shutdown margin as indicated will keep the core subcritical, even if all control rods were withdrawn from the core. During refueling, the reactor refueling cavity is filled with approximately 250,000 gallons of borated water. The boron concentration of this water (1720 ppm boron) is sufficient to maintain the reactor subcritical by approximately 5% $\Delta\rho$ in the cold condition with all rods withdrawn.(2) Periodic checks of refueling water boron concentration insure the proper shutdown margin. Communication requirements allow the control room operator to inform the refueling machine operator of any impending unsafe condition detected from the main control board indicators during fuel movement.

In addition to the above engineered safety features, interlocks are utilized during refueling to insure safe handling. An excess weight interlock is provided on the lifting hoist to prevent movement of more than one fuel assembly at a time. In addition, interlocks on the auxiliary building crane will prevent the trolley from being moved over storage racks containing spent fuel, except as necessary for the handling of fuel.(3) The restriction of not moving fuel in the reactor for a period of 48 hours after the power has been removed from the core takes advantage of the decay of the short half-life fission products and allows any failed fuel to purge itself of fission gases, thus reducing the consequences of a fuel handling accident.

The charcoal filter installed in the fuel handling building exhaust will handle the full (approximately 10,000) cfm capacity of the normal ventilation flow with both exhaust fans operating.(4) The normal mode of operation will require that the ventilation supply fan and one exhaust fan be manually tripped following a radioactivity release with a resulting flow of 7300 cfm through the filter. Any radioactivity which should inadvertently, during a refueling operation, pass through the normally opened equipment door would be handled by the charcoal filter in the fuel handling building. The several radiation monitors installed in the containment building and the fuel handling building will give adequate warning to the refueling crew if radioactivity is released. The efficiency of the installed charcoal filters is at least 90% for inorganic species and 70% for organic species with rated flows.(5) The offsite thyroid dose in the fuel handling accidents analyzed will be less than 15 Rem using these efficiencies should an irradiated fuel bundle be damaged in handling.(5) The fuel handling accident analysis assures that the charcoal adsorbers will perform to remove a minimum of 70% and 90% (organic and inorganic, respectively) iodine activity. Following a period of 30 days, the I-131 will have decayed by a factor of 10 and adsorption by charcoal will no longer be

3.8 REFUELING OPERATIONS (Contd)

required. Valve alignment check sheets are completed to protect against sources of unborated water or draining of the system.

References

(1)FSAR, Section 9.11.

(2)FSAR, Section 3.3.2.

(3)FSAR, Amendment No 17, Item 13.0.

(4)FSAR, Amendment No 17, Item 9.0.

(5)FSAR, Appendix J.

3.13 CONTAINMENT BUILDING AND FUEL STORAGE BUILDING CRANES

Applicability

Applies to the use of cranes over the primary coolant system and the spent fuel storage pool.

Objective

To specify restrictions on the use of the overhead cranes in the Containment Building and the Fuel Storage Building.

Specifications

a. The containment polar crane shall not be used to transport loads over the primary coolant system if the temperature of the coolant or steam in the pressurizer exceeds 225°F.

b. The fuel storage building crane shall not be used to move material past the fuel storage pool unless the crane interlocks are operable or they are bypassed and the crane is under administrative control of a supervisor.

c. The fuel storage building ventilation shall be operating and discharging through the HEPA and charcoal adsorbers during crane operation with loads in excess of 1300 pounds over the fuel storage pool when irradiated fuel which has decayed less than 90 days is in the spent fuel storage pool. If both fans are inoperable, any crane operations shall be completed and further crane operation with loads in excess of 1300 pounds over the spent fuel storage pool shall be terminated until one fan is returned to service.

Basis

Loads are not to be allowed over the pressurized primary coolant system to preclude dropping objects which could rupture the boundary of the primary coolant system allowing loss of coolant and overheating of the core.(1)

The fuel storage building crane is provided with a system of trolley and bridge electrical interlocks that will normally prevent the trolley from moving over the storage pool.(2) This minimizes the possibility of dropping an object on the irradiated fuel stored in the pool and resulting in the release of radioactive products. The interlocks may be bypassed under strict administrative control to allow required movement of fuel and material over and to the east of the pool. The crane can be used over the equipment hatches located in the north and south ends of the Fuel Storage Building without the interlocks operable since a load, even if dropped, could not fall into the storage pool.

References

(1) FSAR, Question 2.3.
(2) FSAR, Amendment No. 17, Item 13.

3.14 CONTROL ROOM VENTILATION

Applicability

This specification applies to the control room ventilation system.

Objective

The operability of the control room ventilation system ensures that (1) the ambient air temperature does not exceed the allowable temperature for continuous duty rating for the equipment and instrumentation cooled by this system, and (2) the control room will remain habitable for Operations personnel during and following all credible accidents.

Specifications

a. If the control room air temperature reaches 120°F, immediate action shall be taken to reduce this temperature or to place the reactor in a hot shutdown condition.

b. The control room ventilation system, consisting of two fans and a filter system, shall be operable. With both fans inoperable or the filter system inoperable, restore the system to operable status within 3-1/2 days or be in cold shutdown within the next 36 hours.

Basis

The reactor protective system and the engineered safeguards system were designed for and the instrumentation was tested at 120°F. Therefore, if the temperature of the control room exceeds 120°F, the reactor will be shut down and the condition corrected to preclude failure of components in an untested environment. The control room ventilation systems are independent except for the charcoal filter and associated equipment. The charcoal filter system is designed to provide filtered makeup air to the control room following a design base accident and is not used during normal operation.

3.15 REACTOR PRIMARY SHIELD COOLING SYSTEM

Applicability

Applies to the shield cooling system.

Objective

To assure the concrete in the reactor cavity does not overheat and develop excessive thermal stress.

Specification

One shield cooling pump and cooling coil shall be in operation whenever cooling is required to maintain the temperature of the concrete below approximately 165°F.

Basis

The shield cooling system is used to maintain the concrete temperature below 165°F, thus preventing weakening of the structure through loss of moisture. The structure must remain intact during a DBA to preclude damage to the reactor building sump and the plugging of the suction lines to the engineered safeguards pumps. One pump and cooling coil is more than adequate to remove the 120,000 Btu/hr heat load at rated power operation. (1)

Reference

(1) FSAR, Section 9.2.1.

TABLE 4.1.3

Minimum Frequencies for Checks, Calibrations and Testing of Miscellaneous Instrumentation and Controls (Contd)

	Channel Description	Surveillance Function	Frequency	Surveillance Method
8.	Control Rod Drive System Interlocks	a. Test	R	a. Verify proper operation of all rod drive control system interlocks, using simulated signals where necessary.
		b. Test	P	b. Same as 8(a) above, if not done within three months.
9.	Flux- T Power Comparator	a. Calibrate	R	a. Use simulated signals.
		b. Test	M	b. Internal test signal.
10.	Calorimetric Instrumentation	a. Calibrate(2)	R	a. Known differential pressure applied to feedwater flow sensors.
11.	Containment Building Humidity Detectors	a. Test	R	a. Expose sensor to high humidity atmosphere.
12.	Interlocks - Isolation Valves on Shutdown Cooling Line	a. Calibrate	R	a. Known pressure applied to sensor.
13.	Service Water Break Detector in Containment	a. Test	R	a. Known differential pressure applied to Sensors.

Amendment No. 30, 31, 38, 66, 81

(1)During the 1978 refueling outage, Item 2.c will only be performed on 7 rods (1 per bank). The secondary rod position surveillance (Item 3.c) will be performed in entirety. Additionally, a 20" rod position check (comparing primary indication to secondary indication) will be conducted on each rod. If the primary and secondary indications vary more than 2" from each other, corrective action will be taken to restore the proper tolerances.

(2)The 1981 surveillance function may be deferred until the end of the 1981 refueling outage.

4.2 EQUIPMENT AND SAMPLING TESTS

Applicability

Applies to plant equipment and conditions related to safety.

Objective

To specify the minimum frequency and type of surveillance to be applied to critical plant equipment and conditions.

Specifications

Equipment and sampling tests shall be conducted as specified in Tables 4.2.1, 4.2.2 and 4.2.3.

Basis

Sampling and Equipment Testing

The equipment testing and system sampling frequencies specified in Tables 4.2.1, 4.2.2 and 4.2.3 are considered adequate, based upon experience, to maintain the status of the equipment and systems so as to assure safe operation. Thus, those systems where changes might occur relatively rapidly are sampled frequently and those static systems not subject to changes are sampled less frequently.

Table 4.2.2

Minimum Frequencies for Equipment Tests

		Test	Frequency	FSAR Section Reference
1.	Control Rods	Drop Times of All Full-Length Rods	Each Refueling Shutdown	7.4.1.3
2.	Control Rods	Partial Movement of All Rods (Minimum of 6 In)	Every Two Weeks	7.4.1.3
3.	Pressurizer Safety Valves	Set Point	One Each Refueling Shutdown	7.3.7
4.	Main Steam Safety Valves	Set Point	Five Each Refueling Shutdown	4.3.4
5.	Refueling System Interlocks	Functioning	Prior to Refueling Operations	9.11.3
6.	Service Water System Valve Actuation (SIS-CHP)	Functioning	Each Refueling Operation	9.1.2
7.	Fire Protection Pumps and Power Supply	Functioning	Monthly	9.6.2
8.	Primary System Leakage	Evaluate	Daily	4 Amend 15, Ques 4.3.7
9.	Diesel Fuel Supply	Fuel Inventory	Daily	8.4.1
10.	Critical Headers Service Water System	150 Psig Hydrostatic Test	Every Five Years	9.1.2

Table 4.2.2 (Contd)

Minimum Frequencies for Equipment Tests

11. Hydrogen Recombiners

Each hydrogen recombiner unit shall be demonstrated operable:

a. At least once per 6 months by verifying during a recombiner unit functional test that the minimum heater sheath temperature increases to ≥ 700°F* within 90 minutes and is maintained for at least 2 hours.

b. At least once per refueling cycle by:

1. Verifying that each of the electrical buses providing recombiner unit power is aligned to receive power from separate diesel generators.

2. Performing a channel calibration of all recombiner instrumentation and control circuits.

3. Verifying through a visual examination that there is no evidence of abnormal conditions within the recombiners (ie, loose wiring or structural connections, deposits of foreign materials, etc).

4. Verifying during a recombiner unit functional test that the heater sheath temperature increases to ≥ 1200°F* within 180 minutes and that the system operates for at least 4 hours.

5. Verifying the integrity of all heater electrical circuits by performing a continuity and resistance to ground test immediately following the above required functional test. The resistance to ground for any heater element shall be ≥ 1000 ohms.

*As measured by installed or portable temperature measuring instruments.

Table 4.2.2 (Contd)

Minimum Frequencies for Equipment Tests

12. Iodine Removal System

The Iodine Removal System shall be demonstrated operable:

a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed or otherwise secured in position, is in its correct position.

b. At least once per 6 months by:

1. Verifying that tanks T-102 and T-103 contain the minimum required volumes.

2. Verifying the concentration of hydrazine in T-102 and sodium hydroxide in T-103.

c. At least once per refueling cycle, during shutdown, by verifying that each automatic valve in the flow path actuates to its correct position.

Table 4.2.3

HEPA FILTER AND CHARCOAL ADSORBER SYSTEMS

Control Room Ventilation and Isolation System (Rated flow: 765 cfm) Fuel Storage Area HEPA/Charcoal Exhaust System (Rated flow: 10,000 cfm, two fans or 7300 cfm, one fan).

The filters in each of the above systems shall be demonstrated operable:

a. At least once per 31 days by initiating, from the Control Room, flow through the HEPA filter and charcoal adsorbers and verifying that the system operates for at least 15 minutes.

b. At least once per refueling cycle or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following major painting, fire or chemical release in any ventilation zone communicating with the system when the HEPA Filter or charcoal adsorbers are in operation by:

   1. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b. of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978 except that the Fuel Storage Area shall have a methy iodide limit of 94% instead of 99%, or replacing with charcoal adsorbers meeting the specifications of Regulatory Guide 1.52, Position C.6.a, Revision 2, March 1978.

   2. Verifying that the HEPA filter bank removes greater than or equal to 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the system at its rated flow ± 20%.

   3. Verifying that the charcoal absorber removes greater than or equal to 99% of a hydrogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the system at its rated flow ± 20%.

Table 4.2.3 (Contd)

HEPA FILTER AND CHARCOAL ADSORBER SYSTEMS

c. At least once per refueling cycle by:

1. Verifying that the pressure drop across the combined HEPA filter and charcoal adsorber bank is less than (6) inches Water Gauge while operating the system.

2. Verifying that on a containment high-pressure and high-radiation test signal, the system automatically switches into a recirculating mode of operation with flow through the HEPA filter and charcoal adsorber bank. (Control Room ventilation only.)

3. Verifying that the system maintains the Control Room at a positive-pressure of greater than or equal to 0.10 inch WG relative to the viewing gallery (dPIC 1834) during system operation. (Control Room ventilation only.)

4. Verifying that with the ventilation system exhausting through the HEPA/Charcoal Filters at its rated flow ± 20%, the bypass flow through damper 1893 is less than 1% of total flow. (Fuel Storage Area only.)

d. After every 720 hours (see Note 1) of charcoal adsorber operation by:

Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b. of Regulatory Guide 1.52 Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978 except that the Fuel Storage Area shall have a methy iodide limit of 94% instead of 99%, or replacing with charcoal adsorbers meeting the specifications of Regulatory Guide 1.52, Position C.6., Revision 2, March 1978.

e. After each complete or partial replacement of a HEPA filter bank by:

Verifying that the HEPA filter bank removes greater than or equal to 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the system at its rated flow ± 20%.

Note 1. Should the 720-hour limitation occur during a plant operation requiring the use of the HEPA filter and charcoal adsorber - such as during a refueling - testing may be delayed until the completion of the plant operation or up to 1,500 hours of filter operation whichever occurs first.

Table 4.2.3 (Contd)

HEPA Filter and Charcoal Adsorber Systems

f. After each complete or partial replacement of a charcoal adsorber bank by:

   Verifying that the charcoal adsorber removes greater than or equal to 99% of a hydrogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the system at its rated flow ± 20%.

g. Verify that the Control Room temperature is < 120°F once per 12 hours when the temperature in the Control Room reaches 105°F.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 81 TO PROVISIONAL OPERATING LICENSE NO. DPR-20

CONSUMERS POWER COMPANY

PALISADES PLANT

DOCKET NO. 50-255

1.0 INTRODUCTION

By letter dated August 30, 1982 as supplemented by letter dated November 5, 1982, Consumers Power Company (the licensee) proposed changes to the Technical Specifications for the Palisades Plant. These changes would (1) modify the operability and testing requirements for the control room and fuel building ventilation filters to meet upgraded model Technical Specifications issued by the NRC on December 12, 1974, and (2) replace the requirement for containment purge filters with a requirement for hydrogen recombiners.

A Notice of Consideration of Issuance of Amendment to License and Proposed No Significant Hazards Consideration Determination and Opportunity for Hearing related to the requested action was published in the Federal Register on November 22, 1983 (48 FR 52810). A request for hearing and public comments were not received.

2.0 DISCUSSION

The NRC staff's letter of December 11, 1974, to Consumers Power Company indicated the need for the Palisades Plant's Technical Specifications to include additional items in order to assure confidence that Engineered Safety Feature (ESF) air filtration systems would function reliably, when required, at a degree of efficiency equal to or greater than that assumed in previously performed accident analyses. Consumers Power initially responded to the staff's request on March 6, 1975, and following discussions with the NRC staff, modified their response in letters dated June 18, 1975, and February 25, 1976. The licensee's August 30, 1982 submittal further modified their response and superceded all previously requested changes addressing ESF filter systems. This latter submittal was supplemented by letter dated November 5, 1982.

Consumers Power Company's proposal includes the expansion of the present technical specification for the control room ventilation and isolation system and the fuel storage area HEPA/charcoal exhaust system, such that the frequency of some tests are increased and the number of tests performed to establish the system's operability are increased.

The licensee's proposed changes to the Technical Specifications include: (1) revision of Section 3.8.4 which addresses the operation of the fuel storage area ventilation system and HEPA/charcoal filter during refueling operations, revision of Table 4.1.3 of Section 4.1 to delete item 14 on control room ventilation and revision of Table 4.2.2 to delete item 11, charcoal and high efficiency filters, to modify items 12.b and 13.c of that Table, and to then renumber items 12 and 13 of that Table; and (2) the addition of Section 3.6.4 which addressed the two independent containment hydrogen recombiners, the addition of item c to Section 3.13 which addresses when the fuel storage building ventilation shall be discharging through the HEPA filter and charcoal adsorbers, the addition of item b to Section 3.14 which addresses the operability of the control room ventilation system with both fans or the filter system inoperable, and the addition of Table 4.2.3 which establishes the manner in which the HEPA filter and charcoal adsorber systems are demonstrated operable for the control room and fuel storage areas.

The changes were proposed by Consumers Power Company so that the specified filter test program would conform to the objectives of the model Technical Specifications included in our letter of December 11, 1974.

3.0 EVALUATION

The NRC staff's evaluation was based upon Positions C.5 (in-place testing criteria) and C.6 (laboratory testing criteria for activated charcoal) of Regulatory Guide 1.52, Revision 2, "Design, Testing, and Maintenance Criteria for Atmospheric Cleanup System Air Filteration and Adsorption Units of Light-Water-Cooled Nuclear Power Plants," and on the Standard Technical Specifications for ESF air filtration systems for Combustion Engineering nuclear reactors (NUREG-0212).

These proposed additions and revisions to the present Technical Specifications expand the scope such that required operator action is specified if the particular ESF filter system is found inoperable, and there is also an increase in the frequency and the number of tests to be performed to demonstrate that the system is operable.

The following sections discuss each of the proposed changes to the Technical Specifications. The proposed changes also necessitate that other related Technical Specifications be modified or added.

3.1 Hydrogen Recombiners (Sections 3.6.4 and 4.2)

The licensee has proposed that a new section, 3.6.4 be added to 3.6 "Containment System." The new section would conform to the guidance of NUREG-0212 and would address the operability of the two independent containment hydrogen recombiners. Both recombiners would be required to be operable when the reactor was at power or at hot standby. One recombiner could be inoperable for up to 30 days. If the recombiner was still inoperable at the end of 30 days, then the reactor would have to be placed in the hot shutdown condition within 12 hours.

With the incorporation of Section 3.6.4 into the Technical Specifications, it is no longer necessary to include the containment post-accident filter system because the hydrogen recombiners will be the means for controlling the buildup of hydrogen following a loss-of-coolant accident (LOCA), rather than through containment purging. Therefore, the requirements for testing the HEPA filters and the charcoal adsorbers of the containment post-accident filter system will not be needed. The NRC staff finds that this proposed Technical Specification change is acceptable.

The tests to demonstrate that the recombiners are operable are presently contained in item 12 of Table 4.2.2. The licensee has proposed that the frequency of the tests in item 12.b be changed from once per 18 months to once per refueling cycle. The NRC staff finds that this modification is acceptable.

With the deletion of item 11 of the present Table 4.2-2, which addresses the frequency of tests of the charcoal and HEPA filters for the control room, fuel storage building, and the containment post-accident filter system, the hydrogen recombiners, presently item 12, now becomes item 11 of Table 4.2-2.

3.1.2 Control Room Ventilation and Isolation System (Section 3.14 and Tables 4.2.2 and 4.2.3)

The licensee has proposed that the heading of Section 3.14 be changed from "Control Room Air Temperature" to "Control Room Ventilation." The licensee has also proposed to add item b to Section 3.14. This would require the reactor to be brought to the cold shutdown condition within 36 hours if both fans and/or the filter system are inoperable and the inoperable system can not be made operable within 3.5 days. Previously, the operability of the two fans and the filter system was not addressed. The time to restore the ventilation system, including the filter system, to the operable status is 3.5 days because a redundant filter system is not available in the control room. The staff finds that the proposed addition of item b to Section 3.14 is important, necessary, and acceptable.

The licensee also proposed to move the testing frequency and the tests to be performed on the HEPA filters and the charcoal adsorbers from item 11 of Table 4.2.2 and to incoporate these tests into a new Table 4.2.3. A number of new tests were added and the frequency of the tests increased compared to those presently in item 11 of Table 4.2.2. These additional tests and their frequency are discussed below.

The new Table 4.2.3 requires that flow be initiated for 15 minutes through the HEPA filters and charcoal adsorbers once per 31 days, and that such flow be initiated from the control room.

In-place halogenated hydrocarbon testing of the charcoal adsorber and in-place DOP testing of the HEPA filter bank is presently required during each refueling shutdown and anytime work on the filters could affect filter integrity. The licensee has proposed that in-place tests now be required once per refueling cycle or after any structural maintenance on the HEPA filter or charcoal adsorber housings, or following major painting, fire, or chemical release in any ventilation zone communicating with the system and that such tests be conducted in accordance with ANSI N510-1975. The licensee has also included, in Table 4.2.3, the requirement for in-place DOP or halogenated hydrocarbon tests following replacement, either partial or in its entirety, of either the HEPA filters or the charcoal adsorbers, respectively.

The licensee has also proposed that a laboratory analysis of charcoal be obtained and tested in accordance with Regulatory Guide 1.52, items C.6.a and C.6.b and that the sample be verified to remove 99% of the methyl iodide when tested in accordance with the testing criteria of Table 2 of Regulatory Guide 1.52. The frequency of this laboratory analysis was proposed to be the same as that proposed for the in-place DOP and halogenated hydrocarbon testing; except that no laboratory analysis is required following complete or partial replacement of a HEPA filter or a charcoal adsorber bank. The licensee proposed that a laboratory test also be performed after 720 hours of filter system operation; however, the licensee proposed some flexibility of operation to allow continued operation of the filter system for greater than 720 hours before requiring the laboratory analysis. The licensee proposed that the test be delayed until the operation, which requires use of filter system, is completed or up to 1500 hours of system operation, whichever.occurs first.

The licensee has not proposed a Technical Specification to verify that bypass flow for the control room filtration system is less than 1% because of the difficulty in performing such a measurement. The staff has agreed to waive such a requirement because the licensee is redesigning a ventilation filter system for the control room. This new system should be operational by restart from the outage that began in August 1983. When this system does become operational, the bypass flow test will be required.

The licensee has proposed that, once per refueling cycle, the pressure drop across the combined HEPA filter and charcoal adsorber bank be verified to be less than 6 inches water gauge while operating the system. At this same test frequency, the licensee has also proposed that it be verified that control room maintains a positive pressure greater than or equal to 0.10 inch water gauge during system operation relative to the viewing gallery and that the control room system automatically switch to the recirculation mode of operation, with flow through the HEPA filter and charcoal adsorber bank, on a containment high pressure signal or on a high radiation signal.

The licensee has also proposed that the control room temperature be verified to be less than 120°F once per 12 hours when the temperature in the control room is greater or equal to 105°F. The licensee did not propose that the temperature be verified to be below 120°F once every 12 hours because the licensee concluded that it would be apparent to the control room operator when the temperature approached 120°F and that documentation on a 12 hour basis is unwarranted until you approach this temperature. The staff agrees with this and finds that the use of the temperature of 105°F as being the point at which the 12 hour surveillance program would become operational is acceptable.

The staff has reviewed the proposed addition of Table 4.2.3 and finds the addition to result in increased surveillance tests and greater assurance that the filter system will perform in a manner in which it was anticipated in the staff's accident evaluation.

With the adoption of Table 4.2.3, item 14 of Table 4.1.3, Control Room Ventilation, was proposed for elimination. The staff finds that this proposed change is acceptable.

The licensee has proposed that the phrase "once per 18 months" in items 12.b and 13.c of Table 4.2.2 be replaced with the phrase "once per refueling cycle." The staff finds that this change is acceptable. With the elimination, as noted earlier, of item 11 from Table 4.2.2, the affected items of Table 4.2.2 are renumbered as 11.b and 12.c, respectively.

3.1.3 Fuel Storage Area Filter System (Sections 3.8.4, 3.13, 4.2, Tables 4.2.2 and 4.2.3

The licensee has proposed to modify Section 3.8.4. Presently, Section 3.8.4 requires that the fuel storage building ventilation system and charcoal filter be operating whenever refueling operations are in process with the equipment door open or whenever irradiated fuel is being handled in the fuel storage building. The licensee has proposed that the ventilation system and the charcoal filter be operating whenever irradiated fuel with less than 30 days decay is handled either during refueling operations with the equipment door open or during fuel handling in the fuel storage building. If both fans are unavailable, then any fuel movement in progress shall be completed and further fuel movements over the spent fuel storage pool will be prohibited until one fan is returned to service.

The staff performed a fuel handling accident analysis inside and outside containment as a part of SEP Topic XV-20. In this analysis, the staff determined that the consequences of a fuel handling accident outside containment (i.e., in the fuel storage building), were considered acceptable with or without the fuel storage area filter system operating. The dose with the filter system operating was calculated to be 9 rem to the thyroid. If the filtration was not operating, the dose would have been 91 rem which is still "appropriately within the guidelines" of 10 CFR Part 100 (i.e.,<100 rem thyroid). If the fuel storage area filter system was not operating and fuel, which has decayed for 30 days or greater, was being handled and if an accident were to occur, the dose consequences of this accident would be of the same magnitude or smaller than the consequences of a fuel handling accident presented in the conclusion to SEP Topic XV-20 with the filter system operating (i.e., approximately 9 rem).

Because the movement of spent fuel over the spent fuel storage pool will not be allowed if both fans are unavailable, except for the completion of fuel movements already in progress, and because the consequences of a fuel handling accident with an assembly which has decayed for 30 days or more would be of a comparative magnitude to the consequences of a fuel handling accident with the filter system operating, the staff finds the proposed change to Section 3.8.4 to be acceptable.

The licensee has proposed to add to Section 3.13, item c, which requires that the fuel storage building ventilation system be operating and discharging through the HEPA filters and charcoal adsorbers during crane operations with loads in excess of 1300 pounds over the fuel storage pool when irradiated fuel, which has decayed less than 90 days, is in the spent fuel storage pool. If both fans are inoperable, any crane operations shall be completed and further crane operations with loads in excess of 1300 pounds over the spent fuel storage pool shall be terminated until one fan is returned to service.

The staff performed an evaluation of an accident involving a load in excess of 1300 pounds over the fuel storage pool. For loads such as a shield block dropped from the fuel storage building crane, there is a potential for rupturing the fuel elements of up to 32 fuel assemblies. The consequences of this accident could exceed the guidelines of 10 CFR Part 100 if the fuel has not decayed for an adequate length of time or if the refueling area filter system is not operating. The occurence of a fuel handling accident two days after shutdown would result in an offsite dose of 290 rem to the thyroid if the filter system were operating.

If this accident were to occur after 90 days, the dose would be 0.15 rem. Since the filter system is designed to remove 90% of the radioiodines released in the fuel handling accident, the dose resulting from a fuel handling accident with fuel which has decayed for at least 90 days would be 1.5 rem if the filter system is not operating. The consequences of this accident are less than that involving a single fuel assembly with filtration (SEP Topic XV-20). Therefore, the staff finds that the proposed addition of item c to Section 3.13 is acceptable.

The licensee proposed that the filter tests, which are enumerated in Table 4.2.3, be applicable to the fuel storage area HEPA/charcoal exhaust system in addition to the control room ventilation and isolation system. Although some tests pertain to the control room system specifically, others encompass both systems. Those tests which are the same for both systems are the in-place DOP and halogenated hydrocarbon tests; the monthly initiation of flow through the filter system by actuation in the control room; laboratory analysis of a charcoal sample except that the methyl iodine removal efficiency should be 94% for the fuel storage area filter system, compared to 99% for the control room system; and verification of pressure drop across the HEPA filter bank and the charcoal adsorber to be less than 6 inches water gauge. The only specification in Table 4.2.3 which addresses the fuel storage area filter system only is item c.4 which requires that once per refueling cycle the bypass flow through damper 1893 be verified to be less than 1% at the system's rated flow ±20%. The staff finds that this test, as well as the other tests of Table 4.2.3 proposed for the fuel storage area filter system is acceptable.

3.1.4 Summary

The staff has concluded that the proposed changes to Section 3.8.4 and Tables 4.1.3 and 4.2.2, and the addition of Section 3.6.4, item c to Section 3.13, item b to Section 3.14, and Table 4.2.3 to Section 4.2 of the Palisades Technical Specifications are acceptable.

4.0 ENVIRONMENTAL CONSIDERATION

The staff has determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, the staff has further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR 51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

5.0 CONCLUSION

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner; and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

5.0 ACKNOWLEDGEMENT

J. Hayes and W. Paulson prepared this evaluation.

Dated: May 22, 1984