

ATTACHMENT 1

Consumers Power Company
Palisades Plant
Docket 50-255

REVISED PROPOSED TECHNICAL SPECIFICATIONS
PAGE CHANGE

PROPOSED CHANGES

November 12, 1991

3 Pages

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4.3 SYSTEMS SURVEILLANCE

APPLICABILITY

Applies to preoperational and inservice structural surveillance of the reactor vessel and other Class 1, Class 2 and Class 3 system components.

OBJECTIVE

To insure the integrity of the Class 1, Class 2 and Class 3 piping systems and components.

SPECIFICATIONS

a,b,c,d - Deleted

- e. The Inservice Inspection program shall be reevaluated as required by 10 CFR 50, Section 50.55a(g)(5) to consider incorporation of new inspection techniques that have been proven practical, and the conclusions of the evaluation shall be used as appropriate to update the inspection program.
- f. Surveillance of the regenerative heat exchanger and primary coolant pump flywheels shall be performed as indicated in Table 4.3.2.
- g. A surveillance program to monitor radiation induced changes in the mechanical and impact properties of the reactor vessel materials shall be maintained as described in Section 4.5.3 of the FSAR.

4.3 SYSTEMS SURVEILLANCE (Cont'd)

Basis

The inspection program specified places major emphasis on the areas of highest stress concentration as determined by general design evaluation and experience with similar systems.⁽¹⁾ In addition, that portion of the reactor vessel shell welds which will be subjected to a fast neutron dose sufficient to change ductility properties will be inspected. The inspections will rely primarily on ultrasonic methods utilizing up-to-date analyzing equipment and trained personnel. Preoperational inspections will establish base conditions by determining indications that might occur from geometrical or metallurgical sources and from discontinuities in weldments or plates which might cause undue concern on a postservice inspection. To the extent applicable, based upon the existing design and construction of the plant, the requirements of Section XI of the Code shall be complied with. Significant exceptions are detailed in the requests for relief which have received NRC approval and are contained in the Class 1, Class 2 and Class 3 Long-Term Inspection Plans.

Valve Testing

To ensure the continued integrity of selected check valves which are relied upon to preclude a potential LOCA outside containment, special requirements for periodic leak tests are specified. In addition a valve disk position check for the LPSI check valves is specified following each use of the LPSI system for shutdown cooling. This position check ensures that the four LPSI check valves have reclosed upon cessation of shutdown cooling flow.

References

- (1) FSAR, Section 4.5.6
- (2) Deleted
- (3) Systematic Evaluation Program Topic V-II.A, NRC letter to the licensee transmitting the final topic evaluation dated November 9, 1981.

TABLE 4.3.2
Miscellaneous Surveillance Items

<u>Equipment</u>	<u>Method</u>	<u>Frequency</u>
1. Regenerative Heat Exchanger		
a. Primary Side Shell to Tube Sheet Welds	Volumetric	5-Year Maximum Interval(100%)
b. Primary Head	Volumetric	5-Year Maximum Interval (100%)
2. Primary Coolant Pump Flywheels	Volumetric	100% Upper Flywheel Each Refueling

ATTACHMENT 2

Consumers Power Company
Palisades Plant
Docket 50-255

REVISED PROPOSED TECHNICAL SPECIFICATIONS
PAGE CHANGE

EXISTING PAGES WITH PROPOSED CHANGES MARKED

November 12, 1991

SYSTEMS SURVEILLANCEAPPLICABILITY

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OBJECTIVE

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- e. The Inservice Inspection program shall be reevaluated as required by 10 CFR 50, Section 50.55a(g)(5) to consider incorporation of new inspection techniques that have been proven practical, and the conclusions of the evaluation shall be used as appropriate to update the inspection program.
- f. Surveillance of the regenerative heat exchanger and primary coolant pump flywheels shall be performed as indicated in Table 4.3.2.
- g. A surveillance program to monitor radiation induced changes in the mechanical and impact properties of the reactor vessel materials shall be maintained as described in Section 4.5.3 of the FSAR. ~~The specimen removal schedule shall be as indicated in Table 4.3.3.~~

SYSTEMS SURVEILLANCE (Cont'd)Basis

The inspection program specified places major emphasis on the areas of highest stress concentration as determined by general design evaluation and experience with similar systems.⁽¹⁾ In addition, that portion of the reactor vessel shell welds which will be subjected to a fast neutron dose sufficient to change ductility properties will be inspected. The inspections will rely primarily on ultrasonic methods utilizing up-to-date analyzing equipment and trained personnel. Preoperational inspections will establish base conditions by determining indications that might occur from geometrical or metallurgical sources and from discontinuities in weldments or plates which might cause undue concern on a postservice inspection. To the extent applicable, based upon the existing design and construction of the plant, the requirements of Section XI of the Code shall be complied with. Significant exceptions are detailed in the requests for relief which have received NRC approval and are contained in the Class 1, Class 2 and Class 3 Long-Term Inspection Plans.

~~Reactor Vessel Surveillance Specimens~~
~~Table 4.3.3 is consistent with the surveillance program as presented in the FSAR.⁽²⁾ However, the withdrawal schedule has been modified to reflect the slightly different wall fluence values resulting from removal of the thermal shield.~~

Valve Testing

To ensure the continued integrity of selected check valves which are relied upon to preclude a potential LOCA outside containment, special requirements for periodic leak tests are specified. In addition a valve disk position check for the LPSI check valves is specified following each use of the LPSI system for shutdown cooling. This position check ensures that the four LPSI check valves have reclosed upon cessation of shutdown cooling flow.

References

(1) FSAR, Section 4.5.6

~~(2) FSAR, Section 4.5.3~~

(3) Systematic Evaluation Program Topic V-II.A, NRC letter to the licensee transmitting the final topic evaluation dated November 9, 1981.

TABLE 4.3.2
Miscellaneous Surveillance Items

<u>Equipment</u>	<u>Method</u>	<u>Frequency</u>
1. Regenerative Heat Exchanger		
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b. Primary Head	Volumetric	5-Year Maximum Interval (100%)
2. Primary Coolant Pump Flywheels	Volumetric	100% Upper Flywheel Each Refueling

TABLE 4.3.3
Reactor Vessel Surveillance Coupon Removal Schedule

<u>Capsule Number</u>	<u>Refueling Number</u> <u>Primary-Optional</u>	<u>Capsule¹</u> <u>Location</u>	<u>Target Removal Time²</u> <u>EFPY @ Refuel No</u>
A-240	2 -	Outside Core Barrel	2.26 @ 2 ³
W-290	5 - 11	Vessel Wall	4.33 @ 5
T-330	5 - 20	Above Core	4.33 @ 5
W-110	11 - 5	Vessel Wall	9.21 @ 11
W-100	20 - 25	Vessel Wall	16.5 @ 20
T-150	20 - 5	Above Core	16.5 @ 20
W-280	25 - 20	Vessel Wall	20.6 @ 25
W-260	35 - 39	Vessel Wall	28.7 @ 35
W-80	39 - 35	Vessel Wall	32.0 @ 39

Delete

¹Refer to Palisades FSAR, Volume 2, Section 4.5.3, Figure 11 for illustration of capsule locations.

²EFPY based on 2530 MW_e power rating.

³2.26 EFY from BCL 585-12 Report, March 13, 1979.

ATTACHMENT 3

Consumers Power Company
Palisades Plant
Docket 50-255

REVISED
REACTOR VESSEL SURVEILLANCE COUPON
REMOVAL SCHEDULE

November 12, 1991

PROPOSED CHANGE TO THE REACTOR VESSEL SURVEILLANCE CAPSULE REMOVAL SCHEDULE

The proposed surveillance capsule removal schedule has been revised:

- to reflect an actual average operating cycle length of 1.0 EFPY as opposed to the 0.8 EFPY previously used to develop the schedule and
- to reflect Palisades plans for a cycle length of 1.15 EFPY beginning with cycle 11 and
- to reflect the actual removal of surveillance capsules W-290 and T-330 at 5.21 EFPY.

Background

The Palisades reactor vessel surveillance program is designed to monitor radiation induced changes to the mechanical and impact properties of the reactor vessel circumferential and longitudinal welds. The vessel weld areas are considered to be the part of the vessel most affected by neutron radiation. Monitoring the radiation effects on the weld materials demonstrates the vessel's ability to maintain its design function. Material test data obtained through the analysis of sample specimens (surveillance capsules) can be used to determine the effect of neutron radiation on the Palisades reactor vessel weld materials throughout the plant's operating life of 32 effective full power years (EFPY).

At Palisades an EFPY is calculated using the actual accumulated thermal megawatt (MW) hours divided by the rated power and then converting the result to years. The surveillance capsule removal schedule uses an estimated EFPY cycle length to provide target dates for the surveillance capsule removal.

The current surveillance capsule removal schedule, Table 4.3.3, was incorporated with Amendment 79, dated February 28, 1984. This amendment removed the estimated target fast neutron fluence and converted the integrated power to EFPY. The Amendment 79 changes were supported by the results of analysis performed on surveillance capsule A-240 which was removed in 1978. This current schedule assumes an operating cycle length of 0.8 EFPY.

Current Status

Current core designs and operating experience places the Palisades operating cycle length at approximately 1.0 EFPY as opposed to the 0.8 EFPY that the current technical specification schedule is based on.

Our most recent calculations indicate that Palisades will reach 8.99 EFPY at the end of cycle (EOC) 9, our current cycle, and 9.95 EFPY at EOC 10. Based on these calculations, we will exceed the target removal time of 9.21 EFPY for capsule W-110 during Cycle 10. Our plans for the 1992 refueling outage do not include removal of surveillance capsule W-110, therefore, we believe it is prudent to change the surveillance capsule removal schedule coincident with the relocation of the schedule to the final safety analysis report (FSAR). The relocation of the schedule is being done in accordance with Generic Letter 91-01.

Technical Justification

Previous correspondence, dated June 14, 1985, January 23, 1986, and March 17, 1986 stated that the weld materials used in the surveillance capsules at Palisades were not representative of the reactor vessel weld materials and therefore could not be used to reliably characterize our reactor vessel welds. In the June 14, 1985 Technical Specifications Change Request which updated the Palisades reactor pressure vessel pressure and temperature limits, it was concluded that surveillance and weld deposit data we have obtained from other sources would more realistically reflect both the chemical and mechanical properties of the Palisades reactor vessel welds. The chemical properties from a reasonably large data base have been used to determine chemistries for the Palisades vessel longitudinal welds. A more limited, but reliable, data base has been employed for the vessel girth welds. License Amendment No. 97, dated September 11, 1986, acknowledged the use of credible surveillance data from sources outside the Palisades reactor vessel surveillance program.

In 1988 Palisades established a program to benchmark reactor vessel fluence codes and to provide confidence that we can accurately predict fluence levels on the reactor vessel beltline. This program utilizes the remaining surveillance capsules as well as supplemental in-vessel and ex-vessel dosimetry that is installed and removed at various refueling outages.

Palisades removed and analyzed supplemental ex-vessel dosimetry at EOC 8 and plans to remove and analyze additional supplemental in-vessel and ex-vessel dosimetry at EOC 9. The installed W-110 surveillance capsule, which we plan to remove at EOC 10, will provide information useful in monitoring accumulated fluence to the vessel. Removing the W-110 surveillance capsule at EOC 10 will allow CPCo to acquire additional fluence information for Cycle 10 without incurring the additional expense of installing supplemental in-vessel dosimetry at the beginning of Cycle 10.

Therefore, since (1) it is recognized that the installed surveillance capsules do not adequately represent the actual chemical and mechanical properties of the vessel weld materials and (2) fluence data is being obtained through supplemental dosimetry, delaying the removal of capsule W-110 by approximately 0.7 EFPY will have no adverse effect on the overall physical characteristics data and fluence data pertaining to the Palisades reactor vessel. The surveillance capsule removal schedule will be maintained in the FSAR to reflect the remaining capsules use in the development of fluence and base metal characteristic data. In addition, we will continue to use surveillance and weld deposit data from other sources which more realistically reflect both the chemical and mechanical properties of the Palisades reactor vessel welds.

PROPOSED FSAR TABLE 4-23

Reactor Vessel Surveillance Coupon Removal Schedule

Capsule Number	Refueling Number		Capsule ¹ Location	Target Removal Time ²	
	Primary	Optional		EFPY@	Refuel No
A-240	2	-	Outside Core Barrel	2.26	@ 2 ³
W-290	5	10	Vessel Wall	5.21	@ 5 ⁴
T-330	5	16	Above Core	5.21	@ 5 ⁴
W-110	10	5	Vessel Wall	9.95	@ 10
W-100	16	19	Vessel Wall	16.5	@ 16
T-150	16	5	Above Core	16.5	@ 16
W-280	19	16	Vessel Wall	20.6	@ 19
W-260	26	29	Vessel Wall	28.7	@ 26
W-80	29	26	Vessel Wall	32.0	@ 29

¹ Refer to Palisades FSAR, Volume 2, Section 4.5.3, Figure 11 for illustration of capsule locations.

² EFPY based on 2530 MW_t power rating.

³ 2.26 EFPY from BCL 585-12 Report, March 13, 1979.

⁴ 5.21 EFPY from CPCo Engineering Analysis, EA-P-PTS-90-001, dated March 21, 1990.