



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. 52
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 July 26, 1979, as supplemented by letter dated September 11, 1979, 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.

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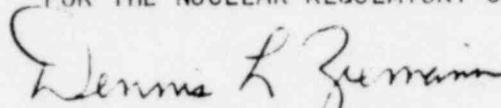
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 3.B of Provisional Operating License No. DPR-20 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 52, 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



Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: October 15, 1979

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ATTACHMENT TO LICENSE AMENDMENT NO. 52

PROVISIONAL OPERATING LICENSE NO. DPR-20

DOCKET NO. 50-255

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

Pages

4-68

4-68a*

4-68b

4-68c*

4-68d

4-69**

*There are no changes to these pages. The Technical Specifications provisions have merely been repositioned.

**This page is included only for the purpose of completing the Table Number.

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4.14 Augmented Inservice Inspection Program for Steam Generators

Applicability

Applies to the tubes within both steam generators.

Objective

To provide assurance of continued integrity of the steam generator tubes over their service lifetime.

Specification

4.14.1 Inspections will be made at a frequency not less than 12 nor more than 24 calendar months after the previous inspection. Tube inspection requirements will include inspection of all unplugged tubes with an ECT indication of greater than or equal to 30% in either of the previous two inspection periods. If inspection of unplugged tubes with an ECT indication of greater than or equal to 30% (which are obstructed by ECT and repair equipment) leads to significant added personnel radiation exposure, alternate tubes may be selected for inspection. In any event, unplugged tubes with ECT indications of greater than or equal to 30% will be inspected at a frequency not to exceed two intervals specified in 4.14.1 above. The conventional, circumferentially wound ECT pull type probe shall be used to inspect unplugged tubes for which an ECT indication greater than or equal to 30% was noted in either of the two previous ECT inspections.

In addition, a random sample of 2% of the tubes in the hot leg and 1% of the tubes in the cold leg of each steam generator will be inspected using the conventional, circumferentially wound ECT probe.

ECT = Eddy Current Test

For the purposes of this Technical Specification, "tubes" refers to that portion of the steam generator U-tube from the point of entry on the cold-leg side to the top support of the cold leg, or from the point of entry on the hot-leg side completely around the U-bend to the top support of the cold leg.

- 4.14.2 Inspection techniques, capable of detecting flaws in the presence of tube dents, shall be used to inspect all accessible tube/tube support plate intersections where an ECT indication was present during the last inspection which was greater than or equal to 45% but cannot be interpreted in the current inspection due to the presence of dents.

In addition, the following shall apply for areas which could not be inspected due to dents in the last inspection. Additional intersections shall be selected for special examination to assure that all accessible previous ECT indications are inspected when their last recorded ECT reading plus the appropriate operating allowance from Table 4.14.1 exceeds the Maximum Allowable Degradation specified in Table 4.14.2. If such indications, regardless of accessibility, are not inspected, the repair criteria of 4.14.3 shall apply for sleeving or plugging.

- 4.14.3 When inspection reveals that the tube degradation plus an NRC-approved appropriate operating allowance (for future degradation) is greater than the maximum allowable degradation specified in Table 4.14.2, the tube shall be declared to be defective and tube plugging or sleeving shall be performed.

In determining that a defect exists at a given tube location, indications from several ECT's may be averaged during a given inspection, but such averaging shall be based on not less than three ECT's.

4.14.4 Operating allowances for future degradation are tabulated in Table 4.14.1.

4.14.5 Sleeves will be installed such that, considering the axial location tolerances, swaging does not take place in an area of known degradation. A base line ECT inspection of all newly installed sleeves shall be performed. In addition, all previously installed sleeves shall be inspected or plugged during subsequent steam generator tube inspections.

4.14.6 A steam generator inspection report shall be submitted to the NRC within 30 days of completion of the inspection and any required repairs.

Basis

Consumers Power has concluded that the change from coordinated phosphate to volatile chemistry control for the secondary side of the steam generators has reduced the previous corrosion rate to essentially zero.

Palisades has not observed any tube leakage since June 1974. Furthermore, mean wastage increase has been essentially zero since February 1976. The continuing inspection program provides for verifying that the corrosion has been arrested.

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The inspection program is also consistent with current industry practices and includes appropriate measures to identify additional degradation of the Palisades steam generators. The operating allowance will be and the repair criteria has been developed based on comparative results between steam generator inspections with consideration given to defect type, location, past corrosion rate observed, etc.

Calculations have been performed to demonstrate that a tube uniformly thinned to 36% of its original nominal wall thickness (64% degradation) can withstand a differential pressure of 1380 psi. Likewise, a sleeved tube can withstand the same differential pressure when the limits in Table 4.14.2 are observed. Combustion Engineering, Inc Report No CEN-59(P) "Palisades Steam Generator Tube Repair by Sleeving," dated August 26, 1977, contains the analytical and test results of tube sleeving.

In dented regions when the presence of a tube support plate tends to cause interference in the eddy current signals, the standard ECT inspection technique will not be able to detect flaws embedded in these regions. However, there are several advanced inspection probes under development which have been shown to be effective in detecting flaws by screening out the interference signals caused by the presence of the tube support plates or dents.

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TABLE 4.14.1

Operating Allowances

<u>Affected Tubes</u>	<u>ECT Indications Other Than Multiple ECT Indications</u>	<u>Multiple ECT Indications</u>
Tubes Inspected During 1978 and Future ECTs(1)	6%	35%
Tubes Last Inspected During 1976 ECT	10%	*NA
Tubes Last Inspected During 1975 ECT	20%	*NA

*Not Applicable

- (1) If the mean wastage increase over the period since the previous steam generator inspection is less than +1 percent (essentially no wastage) the operating allowances listed above shall be applicable. If the mean wastage increase is greater than or equal to +1 percent, new operating allowances shall be submitted to NRC for approval prior to return to operation.

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TABLE 4.14.2

Maximum Allowable Degradation

Location	Maximum Allowable Degradation ⁽⁵⁾
Unsleeved Sections	Degradation = 64%
Sleeved Section	
Region 1 ⁽¹⁾	Sleeve degradation = 34% <u>and</u> tube degradation exceeding the <u>maximum allowable</u> degradation for an unsleeved section. ⁽⁴⁾
Region 2 ⁽²⁾	Either (a) sleeve degradation = 25% when tube degradation in Region 1 exceeds the <u>maximum allowable</u> degradation for an unsleeved section; <u>or</u> (b) tube degradation to Region 2 equal to the <u>maximum allowable</u> degradation for an unsleeved tube. ⁽⁴⁾
Region 3 ⁽³⁾	Tube degradation equal to the <u>maximum allowable</u> degradation for an unsleeved section.

Footnotes:

- (1) The undeformed region of the tube/sleeve assembly containing the original imperfection requiring sleeving.
- (2) The region containing the expansion joint. Specifically, the region of the tube/sleeve assembly bounded by lines approximately 1/4 inch and 2 inches inboard from the sleeve ends.
- (3) The region of the tube/sleeve assembly containing approximately 1/4 inch of each end of the assembly.
- (4) Degradation occurring in the parent tube at any location in a Region and degradation occurring in the sleeve at any location in the same Region that exceeds the applicable maximum allowable degradation will require tube plugging.
- (5) Subtracted from these Maximum Allowable Degradation values shall be an appropriate allowance for future degradation as approved by the NRC as identified in 4.14.3.