

SEP 25 1975

Docket No. 50-255

DISTRIBUTION

Docket File	PCollins
NRC PDR	CHebron
Local PDR	BJones (4)
ORB#1 Reading	BScharf (15)
KRGoller	OI&E (3)
TJCarter	OELD
JMMcGough	ACRS (16)
RAPurple	MSlater-EP1
CMTrammell	TR
SMSheppard	JRBuchanan
DEisenhut	TBAbernathy
SVarga	RSBoyd
AESTeen	
NDube	
JSaltzman	
SKari	

Consumers Power Company
 ATTN: Mr. R. C. Youngdahl
 Senior Vice President
 212 West Michigan Avenue
 Jackson, Michigan 49201

Gentlemen:

The Commission has issued the enclosed Amendment No. 15 to Provisional Operating License No. DPR-20 for the Palisades Plant. This amendment includes Change No. 19 to the Technical Specifications, and is in response to your request dated August 5, 1975, as supplemented August 6 and 14, 1975.

This amendment increases the allowable operating time from 90 to 135 effective full power days before the next steam generator tube inspection and requires a report to us of any steam generator leakage equal to or greater than 0.15 gallons per minute. In addition, this amendment requires that future inservice inspections of the steam generator tubes be conducted in accordance with Regulatory Guide 1.83, Revision 1 (issued July 1975), and adds a restriction on the maximum allowable extension of surveillance test intervals.

Copies of the related Safety Evaluation and the Federal Register Notice are also enclosed.

Sincerely,

Original signed by:
 Robert A. Purple

Robert A. Purple, Chief
 Operating Reactors Branch #1
 Division of Reactor Licensing

Enclosures:

1. Amendment No. 15
2. Safety Evaluation
3. Federal Register Notice

cc w/enclosure:
 See next page

OFFICE	RL:ORB#1	TR	OELD	RL:ORB#1	RL:OR	RL/D
SURNAME	CMTrammell:dc	S. PAWLICKI		RAPurple	KRGoller	RSBoyd
DATE	8/23/75	8/22/75	9/12/75	9/25/75	9/25/75	9/2/75

Handwritten notes: 8/20, 9.18.75, KRG, C-1

SEP 25 1975

cc w/enclosures:

M. I. Miller, Esquire
Isham, Lincoln & Beale
Suite 4200
One First National Plaza
Chicago, Illinois 60670

J. L. Bacon, Esquire
Consumers Power Company
212 West Michigan Avenue
Jackson, Michigan 49201

Paul A. Perry, Secretary
Consumers Power Company
212 West Michigan Avenue
Jackson, Michigan 49201

Kalamazoo Public Library
315 South Rose Street
Kalamazoo, Michigan 49006

Mr. Jerry Sarno
Township Supervisor
Covert County
Route 1, Box 10
Van Buren County, Michigan 49043

cc w/enclosures & incoming:
Mr. John D. Beck (2 cys)
Division of Intergovernmental
Relations
Executive Office of the Governor
Lewis Cass Building, 2nd Floor
Lansing, Michigan 48913

Mr. Gary Williams
Environmental Protection Agency
Federal Activities Branch
One North Wacker Drive, Room 822
Chicago, Illinois 60606

Myron M. Cherry, Esquire
Suite 4501
One IBM Plaza
Chicago, Illinois 60611

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. 1 **5**
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 5, 1975, as supplemented August 6 and 14, 1975, 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; and
 - 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.
2. Accordingly, the license is amended by a change 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, B, and C, as revised, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications, as revised by issued changes thereto through Change No. 19."

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

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed By
✓ Roger S. Boyd

Roger S. Boyd, Acting Director
Division of Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Change No. 19 to Technical
Specifications

Date of Issuance: SEP 25 1975

ATTACHMENT TO LICENSE AMENDMENT NO. 15
CHANGE NO. 19 TO THE TECHNICAL SPECIFICATIONS
PROVISIONAL OPERATING LICENSE NO. DPR-20
DOCKET NO. 50-255

Revise Appendix A as follows:

Remove pages 4-1, 4-2, 4-65, 4-66, and C-2 and insert identically numbered pages.

4.0 SURVEILLANCE REQUIREMENTS

- 4.0.1 Surveillance requirements shall be applicable during the reactor operating conditions associated with individual Limiting Conditions for Operation unless otherwise stated in an individual surveillance requirement.
- 4.0.2 Unless otherwise specified, each surveillance requirement shall be performed within the specified time interval with:
- a. A maximum allowable extension not to exceed 25% of the test interval, and
 - b. A total maximum combined interval time for any 3 consecutive tests not to exceed 3.25 times the specified test interval.

19

4.1 INSTRUMENTATION AND CONTROL

Applicability

Applies to the reactor protective system and other critical instrumentation and controls.

Objective

To specify the minimum frequency and type of surveillance to be applied to critical plant instrumentation and controls.

Specifications

Calibration, testing, and checking of instrument channels, reactor protective system and engineered safeguards system logic channels and miscellaneous instrument systems and controls shall be performed as specified in Tables 4.1.1 to 4.1.3.

Basis

Failures such as blown instrument fuses, defective indicators, and faulted amplifiers which result in "upscale" or "downscale" indication can be easily recognized by simple observation of the functioning of an instrument or system. Furthermore, such failures are, in many cases, revealed by alarm or annunciator action and a check supplements this type of built-in surveillance.

Based on experience in operation of both conventional and nuclear plant systems when the plant is in operation, a checking frequency of once-per-shift is deemed adequate for reactor and steam system instrumentation. Calibrations are performed to insure the presentation and acquisition of accurate information.

The power range safety channels are calibrated daily against a heat balance standard to account for errors induced by changing rod patterns and core physics parameters.

Other channels are subject only to the "drift" error induced within the instrumentation itself and, consequently, can tolerate longer intervals between calibration. Process system instrumentation errors induced by drift can be expected to remain within acceptable tolerances if recalibration is performed at each refueling shutdown interval.

Substantial calibration shifts within a channel (essentially a channel failure) will be revealed during routine checking and testing procedures.

Thus, minimum calibration frequencies of once-per-day for the power range safety channels, and once each refueling shutdown for the process system channels, are considered adequate.

The minimum testing frequency for those instrument channels connected to the reactor protective system is based on an estimated average unsafe failure rate of 1.14×10^{-5} failure/hour per channel. This estimation is based on limited operating experience at conventional and nuclear plants. An "unsafe failure" is defined as one which negates channel operability and which, due to its nature, is revealed only when the channel is tested or attempts to respond to a bona fide signal.

For the specified one-month test interval, the average unprotected time is 360 hours in case of a failure occurring between test intervals, thus the probability of failure of one channel between test intervals is $360 \times 1.14 \times 10^{-5}$ or 4.1×10^{-3} . Since two channels must fail in order to negate the safety function, the probability of simultaneous failure of two-out-of-four channels is $(4.1 \times 10^{-3})^2 = 1.7 \times 10^{-5}$. This represents the fraction of time in which each four-channel system would have one operable and three inoperable channels and equals $1.7 \times 10^{-5} \times 8760$ hours per year, or 2.16 seconds/year.

These estimates are conservative and may be considered upper limits.

Testing intervals will be adjusted as appropriate based on the accumulation of specific operating history.

The testing frequency of the process instrumentation is considered adequate (based on experience at other conventional and nuclear plants on Consumers Power Company's system) to maintain the status of the instruments so as to assure safe operation. As the reactor protection system is not required when the plant is in a refueling shutdown condition, routine testing is not required.

Those instruments which are similar to the reactor protective system instruments are tested at a similar frequency and on the same basis.

4.14 Augmented In-Service 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 At the end of no more than 135 effective full power days or no more than nine calendar months from the date of initial criticality after February 1975, whichever occurs first, an inspection of the steam generator tubes shall be conducted in accordance with the requirements of Regulatory Guide 1.83, "In-Service Inspection of Pressurized Water Reactor Steam Generator Tubes," (issued July 1975) as it applies to inspections after the baseline inspection. 19

4.14.2 Subsequent inspections will be made thereafter at a frequency no less than the inspection intervals specified in Regulatory Guide 1.83 (issued July 1975).^{*} Tube sampling requirements will be as identified in Regulatory Guide 1.83 (issued July 1975). 19

4.14.3 Any steam generator tubes with eddy current indications of 50% or more wall thinning shall be removed from service by plugging. Such indications may be confirmed by averaging during a given inspection, but such average shall be based on not less than three readings, in which case an average indication of 50% or more wall thinning shall result in tube plugging. 19

^{*}Inspection intervals specified in Regulatory Guide 1.83 are not to subject to the 25% extension otherwise permitted by Paragraph 4.0.2. 19

Basis

There exists reasonable assurance that the change from coordinated phosphate to volatile chemistry control for the secondary side of the steam generators, in conjunction with the steam generator tube plugging that has taken place, will significantly reduce the previous corrosion rate that has taken place. This surveillance program provides a means for verifying that the corrosion has been arrested, or quickly identifying any additional corrosion, should it occur.

The surveillance program calls for inspection intervals somewhat shorter than those recommended in Regulatory Guide 1.83 (issued July 1975) for the initial two inspections, although tube sampling and acceptance criteria recommended in Regulatory Guide 1.83 will be implemented. Subsequent inspections will fully conform to Regulatory Guide 1.83 (issued July 1975).

19

19

- (1) Phosphate and sulfate concentration,
- (2) Conductivity (μ mhos/cm),
- (3) pH, and
- (4) Weight of phosphate and sulfate removed.

These reports shall be submitted until the next scheduled steam generator tube inspection following that conducted in February 1975.

- (c) Steam generator tube leakage of 0.15 gpm or greater shall be promptly reported to the Division of Reactor Licensing and the Office of Inspection and Enforcement (Region III). This reporting requirement shall continue in effect until plant shutdown for the steam generator tube inspection following the March 30, 1975 startup, at which time it is cancelled.

19

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 15 TO LICENSE NO. DPR-20

(CHANGE NO. 19 TO TECHNICAL SPECIFICATIONS)

CONSUMERS POWER COMPANY

PALISADES PLANT

DOCKET NO. 50-255

Introduction

By letter dated August 5, 1975, and supplemented August 6 and 14, 1975, Consumers Power Company (the licensee) requested a change to the Technical Specifications for the Palisades Plant. The present Technical Specifications require that at the end of not more than 90 effective full power days (EFPD) or no more than 9 calendar months from the date of initial criticality after February 1975 (which was achieved on March 30, 1975), whichever occurs first, an inspection of the steam generator tubes be conducted in accordance with Regulatory Guide 1.83, "Inservice Inspection of Pressurized Water Reactor Steam Generator Tubes" (issued June 1974), as that guide applies to inspections after the baseline inspection. The proposed change would extend the inspection interval from the present maximum of 90 EFPD to a revised maximum of 135 EFPD for the next inspection. The requirement to conduct this inspection at the end of not more than 9 calendar months would be retained in its present form.

Discussion

On March 28, 1975, we issued a license amendment (No. 13) for the Palisades Plant which changed the Technical Specifications to include the present inspection schedule for steam generator tubes of 90 EFPD or 9 calendar months. As discussed in the Safety Evaluation issued in support of this amendment, this relatively short inspection interval was a continuation of a previous requirement to inspect on this schedule because there had been no substantial operating experience with either the new steam generator water chemistry control program or the flushing program initiated in September 1974 to remove previous treatment chemicals and sludge.

In September 1974, the licensee changed the chemistry of the steam generator water to all-volatile treatment (AVT) and commenced a blowdown and flushing program to remove phosphates, sulfates, and sludge remaining from the previous treatment method.

Following the commencement of this conversion, however, the plant operated for only 7 EFPD at which time the next inspection was required based on a calendar time restriction. Thus, whereas it appeared that the licensee could maintain the levels of the corrodant residual chemicals at low levels, the extensive flushing program which included power operation for an extended period with its attendant mixing and fluid agitation was not complete, and the licensee's ability to maintain the levels of these chemicals at low levels had not been adequately demonstrated. Further, although the licensee was adding AVT chemicals to the steam generator water, we could not conclude at that time that the conversion to this treatment method was in fact complete since there was evidence that a residual of the other treatment chemicals remained and there was no substantial operating history under AVT conditions to demonstrate that this treatment method had been established and stabilized. Furthermore, in December 1974, the licensee, on its own initiative, conducted an eddy current inspection of 569 tubes in the "A" steam generator, with inspection emphasis on those tubes which had previously shown eddy current indications of at least 40% tube wall thinning in previous tests. Within the inspection sample, 27 tubes had eddy current indications of corrosion exceeding 50%, which was the previous plugging limit. Since this evidence suggested the possibility of continuing corrosion and the likelihood of additional tubes with wall thinning in excess of the plugging limit, additional tube inspections were required by us in an Order for Modification of License dated February 6, 1975. This inspection resulted in the detection and plugging of about 280 tubes in both steam generators. Therefore, when Amendment No. 13 was issued there was no conclusive evidence that occasional phosphate and/or sulfate excursions might not occur, with attendant tube degradation potential, and the relatively short inspection interval was retained.

Evaluation

This Safety Evaluation is concerned with the suitability of the Palisades Plant steam generator tubes for service for an additional period of time before the next inservice inspection, and considers the steam generator chemistry results achieved since the last inspection. A more complete discussion of steam generator tube integrity in general, including the NRC staff's (1) criterion and bases which determine the minimum acceptable tube wall thickness in steam generators that may be subject to corrosion while in service, (2) the limits that identify those tubes which should be removed from service by plugging, (3) the practical methods of surveillance

of steam generator tubes and their detection capability, (4) the types and rates of corrosion that could occur in service, (5) inservice inspection intervals, (6) world-wide operating experience with Inconel-600 steam generator tubes in pressurized water reactors using all-volatile chemical treatment of the steam generator coolant, (7) corrosion control, (8) background information relating to the development of Regulatory Guide 1.83, "Inservice Inspection of PWR Steam Generator Tubes" (June 1974), (9) the status of the accuracy and sensitivity of inspection techniques, and (10) proposed changes to Regulatory Guide 1.83 as a result of one year's use, is contained in the Supplementary Testimony of the NRC staff (and consultant) presented at the Prairie Island public hearing on January 28 and 29, 1975⁽¹⁾. The evaluation and conclusions that follow are based in large measure on the technical information presented in that testimony.

Operation at other nuclear power plants of similar design has demonstrated that the establishment and maintenance of stable conditions using AVT treatment is an effective means of avoiding steam generator tube wastage. In March 1975, our principal concern at Palisades was the uncertainty of how quickly and how effectively the AVT treatment could be established. To be conservative, we established a relatively short inspection interval for the next steam generator tube inspection (i.e., 9 months vs. 20 months normally prescribed.)

Since startup (March 30, 1975) following the issuance of Amendment No. 13, the plant has achieved a substantial operating history of over 80 EFPD, including operation at power levels up to 90% and power level changes associated with the licensee's flushing program designed to both assist the removal of previous treatment chemicals and provide for their prompt detection should they appear following power reductions. The monthly flushing reports required by Amendment No. 13, together with the additional information furnished by the licensee in his August 5, 1975 request, demonstrate that AVT chemistry of the steam generator water has been maintained within normal limits except for brief periods when the plant was shut down for maintenance. Power reduction following operation at power plateaus of 70, 80, and 90% have produced no significant return of dissolved phosphates, sodium, or sulphate and, therefore, this operating experience has now demonstrated that the previous treatment chemicals can be controlled to insignificantly low levels during power operation. This experience is in

(1) In the Matter of: Northern States Power Company, (Prairie Island Units 1 and 2), Docket Nos. 50-282 and 50-306

sharp contrast to the results achieved in the period between September 1974 and February 1975. As previously stated, only 7 EFPD of power operation was achieved due to turbine and condenser repairs that required the plant be maintained in a cold shutdown condition. In this state, the licensee was not able to maintain a stabilized AVT chemical condition, and was not able to keep the concentration of phosphates at acceptable levels since the flowrates and agitation needed for such control was not possible in the cold shutdown state with the result that localized tube wastage continued. Since the last tube inspection, however, the plant has operated at power for most of the time and therefore the secondary chemistry has been controlled within the AVT specifications. Phosphate concentration has been held to insignificantly low levels that are below the threshold of concern with respect to phosphate wastage. Therefore, we have reasonable assurance that significant tube corrosion by phosphate wastage has not occurred in this operating period.

Even if we assume tube degradation would occur, the most likely consequence would be a small local tube leak. The licensee has demonstrated the ability to detect leakage as low as 0.001 gpm. Technical Specifications currently limit allowable steam generator tube leakage to not greater than 0.3 gpm for any period greater than 24 consecutive hours. Therefore, in the event of leakage in excess of this limit, plant shutdown and a steam generator tube inspection would be required. In addition, we have added the requirement, with which the licensee agrees, that steam generator leakage of 0.15 gpm or greater be reported to us so that we may closely monitor steam generator leakage during this extension of the operating interval.

In February 1975, a large leak (125 gpm) occurred in a steam generator tube at another facility (Point Beach Unit 1) which developed over a short period of time (minutes) and was therefore not preceded by minor leakage over an extended period. The chemistry data and the results of phosphate dilution by blowdown submitted by this licensee (Wisconsin Electric Power Company) for the six months they had been under AVT control indicate that conductivity of the secondary coolant exceeded AVT specifications, indicating a buildup of impurities. Concentration of impurities with residual phosphate in the sludge still present on the tube sheet react to form free caustic which causes stress corrosion cracking of the tube metal. We believe that this incident at Point Beach Unit 1 was the result of caustic stress corrosion cracking in flow-starved areas of the tube bundle above the tube sheet. In contrast to this experience, the Palisades Plant has operated within the limits of the AVT specification. Sodium conductivity and phosphate have been held to acceptably low levels. Retubing of the main condenser in December 1974 has resulted in little, if any, condenser leakage, and has been a contributing factor to the good chemistry control over this operating period. Based on this experience, we concur with the licensee's conclusion that the chemical environment in the steam generators has not been conducive to caustic cracking, and therefore the type of tube degradation experienced at Point Beach Unit 1 is not expected to occur.

Sludge consists of insoluble, inert, powder-like soft precipitates of heavy-metal phosphates and forms of silicates that tend to deposit in limited flow regions of a PWR steam generator.

Since the phosphate anion of the inert metal phosphates excluding sodium hydrogen phosphate is not soluble in the secondary coolant and therefore not available to create a corrosive environment, the soft powder-like sludge deposits in the steam generator are not a deleterious factor contributing to the degradation of steam generator tubing by wastage or stress corrosion cracking. However, the soluble sodium hydrogen phosphate, which exists along with the insoluble metal phosphates, concentrates in the crevice regions between the tubing and deposited sludge. High concentrations of the soluble sodium hydrogen phosphate can cause localized wastage of Inconel-600 steam generator tubing. These soluble phosphates can be leached and removed by sludge lancing or by chemical flushing and removal by blowdown. Both of these processes induce physical agitation of the sludge deposits. The flushing causes redissolution and dilution of the major portion of the residual sodium hydrogen phosphates in the sludge. The phosphate ions in the bulk water are removed with the blowdown liquid. The remainder is gradually converted to insoluble, inert metal phosphates by reaction with the heavy metal cations in the bulk water and those introduced from the feed water. Wastage-type corrosion is arrested once the phosphate anion concentration of the blowdown liquid is less than 5 ppm. The blowdown liquid is indicative of the bulk water chemistry in the steam generator, the condition of the corrosive environment at the tube to sludge interface and the soluble phosphate ion concentration in the sludge.

Stress corrosion cracking will not occur when the blowdown liquid shows low sodium and conductivity levels, since the absence of highly soluble sodium in coincidence with low conductivity is an excellent indication that free hydroxide (which can cause caustic stress corrosion cracking) is not present.

Therefore, once the sodium and phosphate ions have been reduced to low levels, the remaining sludge does not present a problem from the standpoint of corrosion. Since March 1975, the blowdown chemistry of the Palisades steam generators has shown low levels of phosphate and sodium (both less than 1 ppm).

A few plant shutdowns have resulted in transient values above desired limits, which indicates that a source of these chemicals still remains to be removed by continued blowdown, but these transients were not significant from a corrosion standpoint because of their short duration. The AVT secondary coolant chemistry was stabilized to steady state limits promptly when power operation was resumed.

Prevention of tube degradation is now principally dependent on good AVT chemistry control and control of condenser in-leakage to the secondary coolant, which the licensee has demonstrated over the present operating period.

In summary, the above evidence shows that although there probably is still some sludge present, the chemical composition in the sludge and the area adjacent to the tube surface is now low enough in soluble phosphates and sodium that significant additional tube degradation will not occur.

At the present time, the "B" steam generator has a very small leak which has remained relatively constant between 0.001 and 0.004 gpm, well below the allowable limit. Since this leak was detected shortly after startup following the extensive tube examination conducted in February 1975, and has not increased since that time, this evidence suggests that it was present from the beginning of the current operating period, is probably the result of a defect in one of the plugs used to isolate degraded tubes, and, therefore, does not indicate that tube degradation has continued. Steam generator "A" has shown no evidence of tube leaks during the current period of operation.

The present stabilized AVT chemistry, combined with the control of other chemicals at insignificant levels, should substantially reduce, and may completely arrest, further tube degradation. We therefore conclude that the Palisades steam generators can be safely operated for the requested additional period of time before the next tube inspection with reasonable assurance that significant further tube degradation will not occur.

In addition to the above, this amendment provides for two minor modifications to the present Technical Specifications.

1. Current Technical Specifications permit surveillance intervals to be adjusted plus or minus 25% of the specified test interval to allow flexibility for normal scheduling of plant outages or to establish other prerequisite conditions necessary for conducting the required surveillance. We have added the requirement that the total maximum combined interval time for any three consecutive tests not exceed 3.25 times the specified interval. This additional condition permits the necessary flexibility but at the same time restricts unlimited repeated extensions of a test interval. This restriction is consistent with Standard Technical Specifications currently being issued to new facilities. The licensee agrees with this addition.
2. Current Technical Specifications require that steam generator tube inspections be conducted in accordance with Regulatory Guide 1.83 (issued June 1974). In July 1975, Revision 1 to Regulatory Guide 1.83 was issued. No substantive differences exist between Revision 1 and the original issue (June 1974)

but Revision 1 does contain a clearer description of the inspection requirements and improved definitions. In particular, the revised guide defines significant further tube wall penetration to be 10% or greater because experience has shown that the previous 5% was too close to the limit of error of the eddy current technique. The licensee has requested that future tube inspections be conducted in accordance with Revision 1 of this guide. We have concluded that following the inspection program as specified by Revision 1 (July 1975) of Regulatory Guide 1.83 will continue to provide an acceptable inspection program for the Palisades steam generator tubes.

Since both of the changes discussed above are minor in nature, and neither involves a significant decrease in the probability or consequences of accidents previously considered or involves a significant decrease in a safety margin, these changes do not involve a significant hazards consideration.

Conclusion

We have 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.

Date: SEP 25 1975

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-255

CONSUMERS POWER COMPANY

NOTICE OF ISSUANCE OF AMENDMENT TO PROVISIONAL
OPERATING LICENSE

Notice is hereby given that the U.S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 1.5 to Provisional Operating License No. DPR-20 issued to Consumers Power Company which revised Technical Specifications for operation of the Palisades Plant located in Covert Township, Van Buren County, Michigan. The amendment is effective as of its date of issuance.

The amendment increases the allowable operating time from 90 effective full power days to 135 effective full power days before the next steam generator tube inspection, and requires a report to the Commission of any steam generator leakage equal to or greater than 0.15 gallons per minute for the duration of the extended operating interval. Notice of Proposed Issuance of Amendment to Provisional Operating License in connection with this action was published in the FEDERAL REGISTER on August 13, 1975 (40 F.R. 34030). No request for a hearing or petition for leave to intervene was filed following notice of the proposed action.

In addition, the amendment requires that future inservice inspections of the steam generator tubes be conducted in accordance with Regulatory Guide 1.83, "Inservice Inspection of Pressurized Water Reactor Steam Generator Tubes", Revision 1 (issued July 1975), and adds a restriction

on the maximum allowable extension of surveillance test intervals to the effect that the total maximum combined interval for any three consecutive tests not exceed 3.25 times the specified interval. Prior public notice of this aspect of the amendment is not required since it does not involve a significant hazards consideration.

The application for amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment.

For further details with respect to this action, see (1) the application for amendment dated August 5, 1975, as supplemented August 6 and 14, 1975, (2) Amendment No. **15** to License No. DPR-20 with Change No. **19** and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, NW., Washington, D.C., and at the Kalamazoo Public Library, 315 South Rose Street, Kalamazoo, Michigan.

A copy of items (2) and (3) may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Reactor Licensing.

Dated at Bethesda, Maryland, this **SEP 25 1975**

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by:
Robert A. Purple

Operating Reactors Branch #1
Division of Reactor Licensing

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

September 17, 1975

David E. Kartalia, OELD

PALISADES - PROPOSED LICENSE AMENDMENT POSTPONING STEAM GENERATOR
INSPECTION

The safety evaluation supporting the proposed Palisades amendment has been expanded in response to the concerns expressed in your note to me of September 11, 1975.

Specifically, we have added:

1. A generic discussion (by reference) of the causes of steam generator degradation, its rate of progress and its detection.
2. A clearer expression of what the uncertainties were last March, how these uncertainties have been reduced, and why the previously imposed restrictions can be relaxed.
3. A discussion of the inspections performed last December and March.
4. A description of the differences in conditions during operation between September 1974 and February 1975 and since March 1975. The description explains why tube degradation was experienced during the earlier period and why no significant wastage is expected from the present period.
5. A discussion that acknowledges the tube break at Point Beach Unit 1 and explains why that occurrence is not expected to occur at Palisades.

I believe the revised safety evaluation adequately supports our conclusion that there is reasonable (not absolute) assurance that the Palisades plant can be operated for the extended period without undue risk to public health and safety.

Your concurrence is requested. Your prompt action is also requested since time is running out under the existing tech specs; the issue should be resolved by this Friday (Sept. 19)



Robert A. Purple, Chief
Operating Reactors Branch #1, DRL

September 11, 1975

Robert A. Purple

PALISADES - PROPOSED LICENSE AMENDMENT POSTPONING STEAM
GENERATOR INSPECTION

I am returning without concurrence your proposed Palisades license amendment postponing the upcoming steam generator inspection.

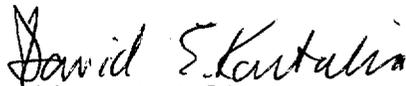
The inspection which you propose to defer is the one which has been in prospect since about a year ago, when the AEC Staff authorized resumed operation of Palisades after a long shutdown caused in large part by steam generator problems. Under license amendments imposed at that time the inspection was to occur within 90 effective full power days or six months, whichever first occurred. The facility operated only seven effective full power days before the six-month limit was reached. Then, in a complicated series of events, the steam generators were inspected and found to be damaged beyond expectation; the defective steam generator tubes were plugged; and resumed operation was authorized subject to a requirement to reinspect after 90 effective full power days or nine months, whichever first occurred. Now the facility is about to reach the 90 EFPD plateau and you, on the licensee's request, propose to extend the inspection deadline. The license amendment which you have drafted would grant an outright 50% extension (i.e., an additional 45 EFPD) and--though perhaps not intentionally--a further "flexibility" extension equal to not more than 25% of the new inspection interval of 135 EFPD.

The principal legal issues raised by this proposal are whether the Staff has adequately articulated its reasons and whether those reasons support the proposed action. In my opinion, these tests have not yet been satisfied. As I recall, the 90 EFPD limit was imposed in part because of uncertainties which have not been eliminated. There were, and are, generic uncertainties respecting the causes of steam generator degradation, its rate of progress and its detection. There are also uncertainties specific to Palisades: for example, the uncertainties respecting the location of the phosphates. Your safety evaluation report should acknowledge these uncertainties and explain convincingly why, in view of the continuing uncertainties, previously imposed restrictions can be relaxed.

The need for a frank and detailed safety evaluation is especially great because of recent developments in the Prairie Island proceeding. In that case the Appeal Board has issued decisions challenging several aspects of the Staff's position on steam generator degradation.

It's not important whether the Appeal Board is right or wrong (their rightness or wrongness will come out in further proceedings). What's important is that the public record shows that a high-level unit of the agency is troubled by the steam generator situation. In any proceeding involving the proposed Palisades licensing action, the adequacy of your safety evaluation would inevitably be judged in part by its responsiveness to the Appeal Board's concerns.

For example, in its most recent Prairie Island decision, the Appeal Board takes issue with the argument that defective tubes can be identified prior to gross failure by monitoring steam generator leakage. According to the Appeal Board, experience at Point Beach shows that sudden failure can occur without prior leakage. Yet in your safety evaluation you give the licensee credit for leak-detection capability without discussing the Appeal Board's assertion or the evidence on which it rests.



David E. Kartalia
Assistant Chief Hearing Counsel

PRELIMINARY DETERMINATION

NOTICING OF PROPOSED LICENSING AMENDMENT

Licensee: Consumers Power Company

Request for: Extension from 90 EFPD to 135 EFPD for the next steam generator tube inspection

Request Date: August 5, 1975

- Proposed Action: (XX) Pre-notice Recommended
- () Post-notice Recommended
- () Determination delayed pending completion of Safety Evaluation

Basis for Decision: A similar action has been twice previously pre-noticed

Concurrence on this form constitutes concurrence in the attached notice.

- CONCURRENCES: DATE:
1. for C. M. Trammell 8/5/75
 2. R. A. Purple 8/5/75
 3. K. R. Collier 8/5/75
 4. Office of Executive Legal Director 8/6/75

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-255

CONSUMERS POWER COMPANY

NOTICE OF PROPOSED ISSUANCE OF AMENDMENT
TO PROVISIONAL OPERATING LICENSE

The Nuclear Regulatory Commission (the Commission) is considering the issuance of an amendment to Provisional Operating License No. DPR-20 issued to Consumers Power Company (the licensee) for operation of the Palisades Plant (the facility), located in Van Buren County, Michigan.

The present license requires that at the end of no more than 90 effective full power days or no more than 9 calendar months of operation from the initial criticality after February 1975, (which occurred March 28, 1975) whichever occurs first, an inspection of the steam generator tubes will be conducted in accordance with the requirements of Regulatory Guide 1.83, 'Inservice Inspection of Pressurized Water Reactor Steam Generator Tubes' (issued June 1974) as that guide applies to inspections after the baseline inspection.

The proposed amendment would increase the allowable operation time to 135 effective full power days ^{before the next} ~~for this~~ inspection. The requirement to conduct ^{an} ~~this~~ inspection at the end of 9 calendar months would be retained in its present form. The amendment is proposed by the licensee's ~~application for amendment dated August 5, 1975~~ application for amendment dated August 5, 1975, as supplemented by letter dated August ⁶ ~~5~~, 1975.

Prior to issuance of the proposed license amendment, the Commission will have made the findings required by the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations.

By _____ the licensee may file a request for a hearing and any person whose interest may be affected by this proceeding may file a request for a hearing in the form of a petition for leave to intervene with respect to the issuance of the amendment to the subject provisional operating license. Petitions for leave to intervene must be filed under oath or affirmation in accordance with the provisions of Section 2.714 of 10 CFR Part 2 of the Commission's regulations. A petition for leave to intervene must set forth the interest of the petitioner in the proceeding, how that interest may be affected by the results of the proceeding, and the petitioner's contentions with respect to the proposed licensing action. Such petitions must be filed in accordance with the provisions of this FEDERAL REGISTER Notice and Section 2.714, and must be filed with the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Docketing and Service Section, by the above date. A copy of the petition and/or request for a hearing should be sent to the Executive Legal Director, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555 and to M. I. Miller, Esquire, Isham, Lincoln & Beale, Suite 4200, One First National

Plaza, Chicago, Illinois 60670 and J. L. Bacon, Esquire, Consumers Power Company, 212 West Michigan Avenue, Jackson, Michigan 49201, the attorneys for the licensee.

A petition for leave to intervene must be accompanied by a supporting affidavit which identifies the specific aspect or aspects of the proceeding as to which intervention is desired and specifies with particularity the facts on which the petitioner relies as to both his interest and his contentions with regard to each aspect on which intervention is requested. Petitions stating contentions relating only to matters outside the Commission's jurisdiction will be denied.

All petitions will be acted upon by the Commission or licensing board designated by the Commission or by the Chairman of the Atomic Safety and Licensing Board Panel. Timely petitions will be considered to determine whether a hearing should be noticed or another appropriate order issued regarding the disposition of the petitions.

In the event that a hearing is held and a person is permitted to intervene, he becomes a party to the proceeding and has a right to participate fully in the conduct of the hearing. For example, he may present evidence and examine and cross-examine witnesses.

For further details with respect to this action, see the application for amendment ^{dated August 5, 1975 as amended} and supplement ^{dated August 6, 1975} dated August 5, 1975, which are available for public inspection at the Commission's Public Document Room, 1717 H Street,

NW, Washington, D.C., and at the Kalamazoo Public Library, 315 South
Rose Street, Kalamazoo, Michigan 49006. The ~~license amendment and the~~
Safety Evaluation, when issued, may be inspected at the above locations,
and a copy may be obtained upon request addressed to the U.S. Nuclear
Regulatory Commission, Washington, D.C. 20555, Attention: Director,
Division of Reactor Licensing.

Dated at Bethesda, Maryland, this

FOR THE NUCLEAR REGULATORY COMMISSION

Robert A. Purple, Chief
Operating Reactors Branch #1
Division of Reactor Licensing