ATTACHMENT 2

To

Letter from C. R. Steinhardt (WPSC) to Document Control Desk (NRC)

Dated

January 27, 1992

Proposed Amendment No. 106

Affected TS Pages

TABLE OF CONTENTS
TECHNICAL SPECIFICATIONS
APPENDIX A

LIST OF FIGURES

(4) Physical Protection

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved "Kewaunee Nuclear Power Plant Security Manual", Rev. 1, approved by the NRC on December 15,1989; the "Kewaunee Nuclear Power Plant Security Force Training and Qualification Manual", Rev. 7, approved by the NRC on November 17, 1987; and the "Kewaunee Nuclear Power Plant Security Contingency Plan", Rev. 1, approved by the NRC on September 1, 1983. These manuals include amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p).

(5) Deleted

(6) Steam Generator Upper Lateral Supports

The design of the steam generator upper lateral supports may be modified by reducing the number of snubbers from four (4) to one (1) per steam generator.

D. The licensees shall comply with applicable effluent limitations and other limitations and monitoring requirements, if any, specified pursuant to Section 401(d) of the Federal Water Pollution Control Act Amendments of 1972.

E. This license is effective as of the date of issuance, and shall expire at midnight on December 21, 2013.

4.2 ASME CODE CLASS IN-SERVICE INSPECTION AND TESTING

APPLICABILITY

Applies to in-service structural surveillance of the ASME Code Class components and supports and functional testing of pumps and valves.

OBJECTIVE

To assure the continued integrity and operational readiness of ASME Code Class 1, 2 and 3 components.

SPECIFICATION

a. ASME Code Class 1, 2 and 3 Componerts and Supports

1. In-service inspection of ASME Code Class 1, Class 2 and Class 3 components and supports shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR Part 50, Section 50.55a(g), except where relief has been granted by the Commission pursuant to 10 CFR Part 50, Section 50.55a(g)(6)(i). The testing and surveillance of shock suppressors (snubbers) is detailed in Technical Specification Sections 3.14 and 4.14.

2. In-service testing of ASME Code Class 1, Class 2 and Class 3 pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR Part 50, Section 50.55a(g), except where relief has been granted by the Commission pursuant to 10 CFR Part 50, Section 50.55a(g)(6)(i).

3. Surveillance testing of pressure isolation valves:

   a. Periodic leakage testing[1] on each valve listed in Table TS 3.1-2 shall be accomplished prior to entering the operating mode after every time the plant is placed in the cold shutdown condition for refueling, after each time the plant is placed in a cold shutdown condition for 72 hours if testing has not been accomplished in the preceding 9 months, and prior to returning the valve to service after maintenance, repair, or replacement work is performed.

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[1]To satisfy ALARA requirements, leakage may be measured indirectly (as from the performance of pressure indicators) if accomplished in accordance with approved procedures and supported by computations showing that the method is capable of demonstrating valve compliance with the leakage criteria.

b. Whenever integrity of a pressure isolation valve listed in Table TS 3.1-2 cannot be demonstrated, the integrity of the remaining pressure isolation valve in each high pressure line having a leaking valve shall be determined and recorded daily. In addition, the position of the other closed valve located in the high pressure piping shall be recorded daily.

b. Steam Generator Tubes

Examinations of the steam generator tubes shall be in accordance with the in-service inspection program described herein. The following terms are defined to clarify the requirements of the inspection program.

Imperfection is an exception to the dimension, finish, or contour required by drawing or specification.

Degradation means a service-induced cracking, wastage, wear or general corrosion occurring on either inside or outside of a tube.

% Degradation is an estimated % of the tube wall thickness affected or removed by degradation.

Degraded Tube means a tube contains an imperfection ≥20% of the nominal wall thickness caused by degradation.

Defect means an imperfection of such severity that it exceeds the plugging limit. A tube containing a defect is defective.

Distorted Indication is a possible tube wall loss condition that is unquantifiable with a numeric percent call due to the existing signal characteristics.

Tube Inspection means an inspection of the steam generator tube from the point of entry (e.g., hot leg side) completely around the U-bend to the top support of the opposite leg (cold leg).

Tube is the Reactor Coolant System pressure boundary past the hot leg side of the tubesheet and before the cold leg side of the tubesheet.

Tubesheet Crevice Region is, for the purposes of applying the in-service inspection program plug and repair criteria, the area from the tube end to 5 inches below the top of the tubesheet.

Plugged Tube is a tube intentionally removed from service by plugging in the hot and cold legs because it is defective, or because its continued integrity could not be assured.

Repaired Tube is a tube that has been modified to allow continued service consistent with plant Technical Specifications regarding allowable tube wall degradation, or to prevent further tube wall degradation. A tube without repairs is a nonrepaired tube.

Squirrel Indications are generally multiple stress corrosion cracks in the roll transition area and mid span of the tubesheet.

1. Steam Generator Sample Selection and Inspection

   The in-service inspection may be limited to one steam generator on a rotating schedule encompassing the number of tubes determined in TS 4.2.b.2.a provided the previous inspections indicated that the two steam generators are performing in a like manner.

2. Steam Generator Tube Sample Selection and Inspection

   The tubes selected for each in-service inspection shall:

   a. Include at least 3% of the total number of nonrepaired tubes, in both steam generators, and 3% of the total number of repaired tubes in both steam generators. The tubes selected for these inspections shall be selected on a random basis except as noted in 4.2.b.2.b.

   b. Concentrate the inspection by selection of at least 50% of the tubes to be inspected from critical areas where experience in similar plants with similar water chemistry indicates higher potential for degradation.

   c. Include the inspection of all non-plugged tubes which previous inspections revealed in excess of 20% degradation. The previously degraded tubes need only be inspected about the area of previous degradation indication if their inspection is not employed to satisfy 4.2.b.2.a and 4.2.b.2.b above.

   d. The second and third sample inspections during each in-service inspection may be less than the full length of each tube by concentrating the inspection on those areas of the tubesheet array and on those portions of the tubes where tubes with imperfections were previously found.

   e. If a tube does not permit the passage of the eddy current inspection probe the entire length and through the U-bend, this shall be recorded and an adjacent tube shall be inspected. The tube which did not allow passage of the eddy current probe shall be considered degraded.

The results of each sample inspection shall be classified into one of the following three categories, and actions taken as described in Table 4.2-2.

Category	Inspection Results
C-1	Less than 5% of the total tubes inspected are degraded tubes, and none of the inspected tubes are defective.
C-2	One or more tubes, but not more than 1% of the total tubes inspected are defective, or between 5% and 10% of the total tubes inspected are degraded tubes.
C-3	More than 10% of the total tubes inspected are degraded tubes or more than 1% of the inspected tubes are defective.

NOTE: In all inspections, previously degraded tubes must exhibit significant (>10%) further wall penetrations to be included in the above percentage calculations.

3. Inspection Frequencies

The above required in-service inspections of steam generator tubes shall be performed at the following frequencies:

a. In-service inspections shall be performed at refueling intervals not more than 24 calendar months after the previous inspection. If two consecutive inspections following service under AVT conditions, not including the pre-service inspection, result in all inspection results falling into the C-1 category; or if two consecutive inspections demonstrate that previously observed degradation has not continued and no additional degradation has occurred, the inspection interval may be extended to a maximum of once per 40 months.

b. If the results of the in-service inspection of a steam generator conducted in accordance with Table 4.2-2 fall in Category C-3, the inspection frequency shall be increased to at least once per 20 months. The increase in inspection frequency shall apply until a subsequent inspection meets the conditions specified in 4.2.b.3.a and the interval can be extended to a 40-month period.

c. Additional, unscheduled in-service inspections shall be performed on each steam generator in accordance with the first sample inspection specified in Table 4.2-2 during the shutdown subsequent to any of the following conditions:

1. Primary-to-secondary tube leaks (not including leaks originating from tube-to-tubesheet welds) in excess of the limits of Specifications 3.1.d and 3.4.a.4, or

2. A seismic occurrence greater than the Operating Basis Earthquake, or

3. A loss-of-coolant accident requiring actuation of the engineering safeguards, where the cooldown rate of the Reactor Coolant System exceeded 100°F/hr, or

4. A main steam line or feedwater line break, where the cooldown rate of the Reactor Coolant System exceeded 100°F/hr.

d. If the type of steam generator chemistry treatment is changed significantly, the steam generators shall be inspected at the next outage of sufficient duration following 3 months of power operation since the change.

4. Plugging Limit Criteria

The following criteria apply independently to tube[2] and sleeve wall degradation:

a. Any tube[2] which, upon inspection, exhibits tube wall degradation of 50% or more shall be plugged or repaired prior to returning the steam generator to service. If significant general tube thinning occurs, this criterion will be reduced to 40% wall degradation. Tube repair shall be in accordance with the methods described in WCAP-11643, "Kewaunee Steam Generator Sleeving Report (Mechanical Sleeves)" or CEN-413-P, "Kewaunee Steam Generator Tube Repair Using Leak Tight Sleeves."

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[2]For the 1991-1992 operating cycle only, Specification 4.2.b.4 applies to the tube excluding the hot leg tubesheet crevice region. Refer to Specification 4.2.b.5 for the hot leg tubesheet crevice region criteria.

b. Any Westinghouse mechanical sleeve which, upon inspection, exhibits wall degradation of 31% or more shall be plugged prior to returning the steam generator to service. Figure TS 4.2-1 illustrates the application of tube, sleeve, and tube/sleeve joint plugging limit criteria.

c. Any Combustion Engineering leak tight sleeve which, upon inspection, exhibits wall degradation of 40% or more shall be plugged prior to returning the steam generator to service. This plugging limit applies to the sleeve up to and including the weld region.

5. Hot Leg Tubesheet Crevice Plugging Limit Criteria[3]

The following criteria applies to indications in the hot leg tubesheet crevice region:

a. Any tubesheet crevice indication which:

1. Exhibits tube wall degradation of 50% or more with the bobbin coil exam, or

2. Is identified as a multiple circumferential indication or single circumferential indication with the motorized rotating pancake coil (MRPC) exam, or

3. Is identified as a multiple axial indication (MAI) or single axial indication (SAI) with the MRPC exam and is repairable by sleeving within the 27-inch sleeving boundary, or

4. Is identified as a MAI or SAI with MRPC exam and the corresponding bobbin call was either a distorted roll indication, distorted crevice indication or squirrel,

shall be plugged or repaired prior to returning the steam generator to service. If significant general tube thinning occurs, this criterion will be reduced to 40% wall degradation. Repair methods will be submitted under 10 CFR 50.90 to be incorporated as an amendment in the facility license. The Commission will review the repair method, issue a significant hazards determination, and amend the facility license.

b. Any tubesheet crevice indication which is not categorized in Specification 4.2.b.5.a may be left in service provided that the number of crevice indications left in service does not exceed a total of 388 tubes per steam generator.

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[3]Specification 4.2.b.5 is applicable for the 1991-1992 operating cycle only.

6. Reports

a. Following each in-service inspection of steam generator tubes, if there are any tubes requiring plugging or repairing, the number of tubes plugged or repaired shall be reported to the Commission within 30 days.

b. The results of the steam generator tube in-service inspection shall be included in the Annual Operating Report for the period in which this inspection was completed. This report shall include:

1. Number and extent of tubes inspected.

2. Location and percent of wall-thickness penetration for each indication of a degradation.

3. Identification of tubes plugged.

4. Identification of tubes repaired.

c. Results of a steam generator tube inspection which fall into Category C-3 require prompt (within 4 hours) notification of the Commission consistent with 10 CFR 50.72(b)(2)(i). A written follow up report shall be submitted to the Commission consistent with Specification 4.2.b.6.a, using the Licensee Event Report System to satisfy the intent of 10 CFR 50.73(a)(2)(ii).

BASIS

The plant was not specifically designed to meet the requirements of Section XI of the ASME Code; therefore, 100% compliance may not be feasible or practical. However, access for in-service inspection was considered during the design and modifications have been made where practical to make provisions for maximum access within the limits of the current plant design. Where practical, the inspection of ASME Code Class 1, Class 2 and Class 3 components is performed in accordance with Section XI of the ASME Code. If a code required inspection is impractical, a request for a deviation from the requirement is submitted to the Commission for approval.

The basis for surveillance testing of the Reactor Coolant System pressure isolation valves identified in Table T.S. 3.1-2 is contained within "Order for Modification of License" dated April 20, 1981.

Technical Specification 4.2.b

These Technical Specifications provide the inspection and repair/plugging requirements for the steam generator tubes at the Kewaunee Nuclear Power Plant. Fulfilling these specifications will assure the KNPP steam generator tubes are inspected and maintained in a manner consistent with current NRC regulations and guidelines including the General Design Criteria in 10 CFR Part 50, Appendix A.

General Design Criterion (GDC) 14 "Reactor Coolant Pressure Boundary," and GDC 31, "Fracture Prevention of Reactor Coolant Pressure Boundary," require that the reactor coolant pressure boundary have an extremely low probability of abnormal leakage, of rapidly propagating failure, and of gross rupture. Also, GDC 15, "Reactor Coolant System Design," requires that the Reactor Coolant System and associated auxiliary, control, and protection systems be designed with sufficient margin to ensure that the design conditions of the reactor coolant pressure boundary are not exceeded during any condition of normal operation, including anticipated operational occurrences. Furthermore, GDC 32 "Inspection of Reactor Coolant System Pressure Boundary," requires that components that are part of the reactor coolant pressure boundary be designed to permit periodic inspection and testing of critical areas to assess their structural and leak tight integrity.

The NRC has developed guidance for steam generator tube inspections and maintenance including Regulatory Guides 1.83 and 1.121. Regulatory Guide 1.83, "In-service Inspection of Pressurized Water Reactor Steam Generator Tubes," forms the basis for many of the requirements in this section and should be consulted prior to any revisions. Regulatory Guide 1.121, "Bases for Plugging Degraded PWR Steam Generator Tubes," defines the minimum wall thickness in a steam generator tube, and may be applied to tube sleeves in determining their minimum wall thickness.

Technical Specification 4.2.b.1

If the steam generators are shown to be performing in a like manner, it is appropriate to limit the inspection to one steam generator on a rotating schedule. Economic savings as well as reductions in personnel exposure and outage duration can be realized.

Technical Specification 4.2.b.2

Periodic inspection of the steam generator tubes allows evaluation of their service condition. As operational experience has become available it is evident that certain types of steam generators are susceptible to generic degradation mechanisms. Site specific steam generator tube degradation has also occurred throughout the industry. The inspection program at Kewaunee is designed to identify both generic and site specific tube degradation mechanisms.

Steam generator tube surveillance at Kewaunee is generally performed using eddy current techniques. Various methods of eddy current (EC) testing are used to inspect steam generator tubes for wall degradation. EC methods have improved considerably since Kewaunee began commercial operation in 1974. Single frequency EC testing with a single probe and X-Y plotter have evolved into multifrequency techniques with assorted probe types and sophisticated software to allow more accurate volumetric tube examinations. Profilometery techniques are also being developed which detect imperfections in a tube's original geometry. WPSC is committed to utilize advancing EC testing technology, as appropriate, to assure accurate determination of the steam generator tubes' service condition.

Technical Specification 4.2.b.3

Steam generator tube inspections are generally scheduled during refueling outages at the Kewaunee Nuclear Power Plant. The tubes scheduled for a given inspection are based upon their service condition determined during previous inspections, and operational experience from other plants with similar steam generators and water chemistry. Identification of degraded steam generator tube conditions results in augmentation of the inspection effort as well as increasing the frequency of subsequent inspections. In this manner, steam generator tube surveillance is consistent with service conditions.

There are several operational occurrences or transients that will require subsequent steam generator tube inspections. These inspections are required as a result of excessive primary-to-secondary leakage or transients imposing large mechanical and thermal stresses on the tubes.

Technical Specification 4.2.b.4

Steam generator tubes[4] found with less than the minimum wall thickness criteria determined by analysis, as described in WCAP 7832[5][6], must either be repaired to be kept in service or removed from service by plugging.

Steam generator tube plugging is a common method of preventing primary-to-secondary steam generator tube leakage and has been utilized since the inception of PWR nuclear reactor plants. This method is relatively uncomplicated from a structural/mechanical standpoint as flow is cut off from the affected tube by plugging it in the hot and cold leg faces of the tubesheet.

To determine the basis for the sleeve plugging limit, the minimum sleeve wall thickness was calculated in accordance with Draft Regulatory Guide 1.121 (August 1976).

For the Westinghouse mechanical sleeves, the sleeve plugging limit of 31% is applied to the sleeve as shown on Figure TS 4.2-1. For the Combustion Engineering leak tight sleeves, a plugging limit of 40% is applied to the sleeve and weld region. The sleeve plugging limits allow for eddy current testing inaccuracies and continued operational degradation per Draft Regulatory Guide 1.121 (August 1976).

Repair by sleeving, or other methods, has been recognized as a viable alternative for isolating unacceptable tube degradation and preventing tube leakage. Sleeving isolates unacceptable degradation and extends the service life of the tube, and the steam generator. Tube repair, by sleeving in accordance with WCAP 11643[7] and CEN-413-P[8] has been evaluated and analyzed as acceptable. The Westinghouse mechanical sleeve spans the degraded area of the parent tube in the tubesheet region. The sleeves are either 36", 30" or 27" to allow access permitted by channel head bowl geometry. The sleeve is hydraulically expanded and hard rolled into the parent tubing.

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[4]For the 1991-1992 operating cycle only, Specification 4.2.b.4 applies to the tube excluding the hot leg tubesheet crevice region. Refer to Specification 4.2.b.5 for the tubesheet crevice region criteria.

[5]WCAP 7832, "Evaluation of Steam Generator Tube, Tube Sheet and Divider Plate Under Combined LOCA Plus SSE Conditions."

[6]E. W. James, WPSC, to A. Schwencer, NRC, dated September 6, 1977.

[7] WCAP 11643, Kewaunee Steam Generator Sleeving Report, Revision 1, November 1988 (Proprietary).

[8]CEN-413-P, "Kewaunee Steam Generator Tube Repair Using Leak Tight Sleeves," January 1992 (Proprietary).

There are three types of Combustion Engineering leak tight sleeves. The first type, the straight tubesheet sleeve, spans the degraded area of the parent tube in the tubesheet crevice region. The sleeve is welded to the parent tube near each end. The second type of sleeve is the peripheral tubesheet sleeve. The sleeve is initially curved as part of the manufacturing process and straightened as part of the installation process. The third type of sleeve, the tube support plate sleeve, spans the degraded area of the tube support plate and is installed up to the sixth support plate. This sleeve is welded to the parent tube near each end of the sleeve.

The hydraulic equivalency ratios for the application of normal operating, upset, and accident condition bounding analyses have been evaluated. Design, installation, testing, and inspection of steam generator tube sleeves requires substantially more engineering than plugging, as the tube remains in service. Because of this, the NRC has defined steam generator tube repair to be an Unreviewed Safety Question as described in 10 CFR 50.59(a)(2). As such, other tube repair methods will be submitted under 10 CFR 50.90; and in accordance with 10 CFR 50.91 and 92, the Commission will review the method, issue a significant hazards determination, and amend the facility license accordingly. A 90-day time frame for NRC review and approval is expected.

Technical Specification 4.2.b.5

The purpose of Specification 4.2.b.5 is to clarify the repair criteria for ambiguous eddy current indications in the hot leg tubesheet crevice region and is applicable for the 1991-1992 operating cycle only. During the spring 1990 refueling outage, eddy current inspections using a rotating pancake coil found axial indications in the tubesheet crevice region which were not discernible using the standard bobbin coil eddy current probe. A metallurgical exam of two tubes pulled from Steam Generator B hot leg revealed the presence of axial cracks within the tubesheet crevice area which could not be reliably detected and sized with the standard bobbin coil technology.

An evaluation of tube integrity and associated radiological consequences was performed to show that continued operation of the plant with these indications in service provided an adequate margin of safety. This evaluation was based the pulled tube exam and leakage rate testing of crevices restricted by top-of-tubesheet dents analogous to those present in the Kewaunee steam generators. The details of this evaluation are documented in WCAP 12790[9].

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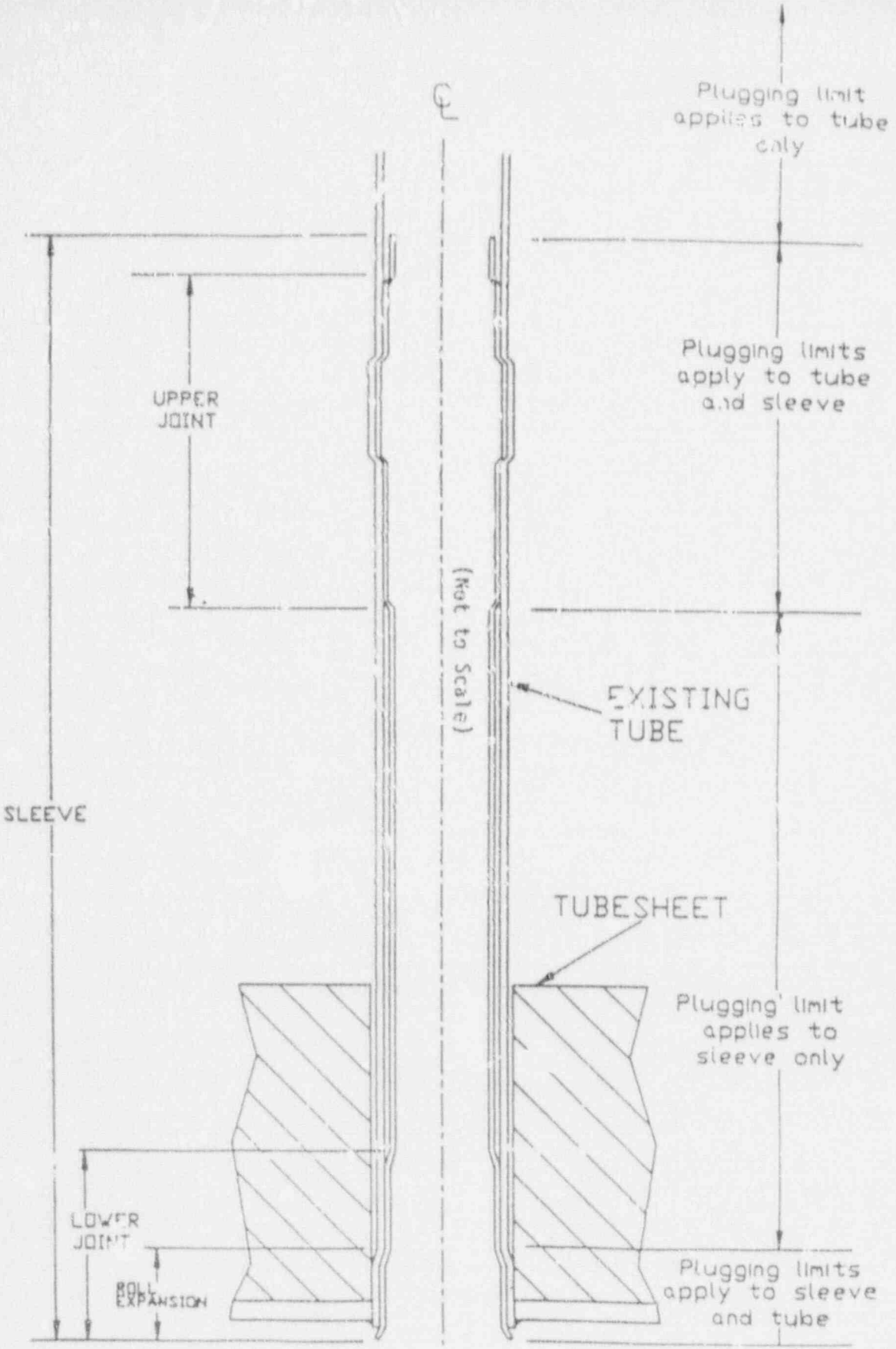
[9]WCAP 12790 "Kewaunee Steam Generator Mid-Cycle Report," December 1990 (Proprietary).

The results of this evaluation conservatively demonstrate that with an operating leak rate limit of 200 gallons per day (administrative limit imposed for the 1991-1992 operating cycle), a total of 388 tubes per steam generator with through wall cracks in the tubesheet crevice region can be in service without exceeding 10% of the 10 CFR Part 100 guidelines during a postulated steam line break.

During the 1991 refueling outage 27-inch sleeves will be installed in addition to the 30- or 36-inch sleeves which were used in previous outages. The 27-inch sleeves expand the current sleeving boundary to cover approximately 84% of the tube bundle. During the 1992 refueling outage, flexible sleeving technology may be used which will extend the sleeving boundary to all but the outermost tubes. Therefore, this specification is an interim measure for the 1991-1992 operating cycle until the sleeving boundary is extended.

Technical Specification 4.2.b.6

Category C-3 inspection results are considered abnormal degradation to a principal safety barrier and are therefore reportable under 10 CFR Part 50.72(b)(2)(i) and 10 CFR Part 50.73(a)(2)(ii).



APPLICATION OF PLUGGING LIMIT FOR A WESTINGHOUSE MECHANICAL SLEEVE

Proposed Amendment No. 106
1/27/92

FIGURE TS 4.2-1

ATTACHMENT 3

To

Letter from C. R. Steinhardt (WPSC) to Document Control Desk (NRC)

Dated

January 27, 1992

Proposed Amendment No. 106

Affidavit Pursuant to 10CFR2.790

CEN-413-P, "Kewaunee Steam Generator Tube
Repair Using Leak Tight Sleeves"
January, 1992

AFFIDAVIT PURSUANT

TO 10 CFR 2.790

Combustion Engineering, Inc.)
State of Connecticut)
County of Hartford) ss :

I, S. A. Toelle, depose and say that I am the Manager, Operating Reactor Licensing, of Combustion Engineering, Inc., duly authorized to execute this affidavit, and have reviewed or caused to have reviewed the information which is identified as proprietary and referenced in the paragraph immediately below. I am submitting this affidavit in conformance with the provisions of 10 CFR 2.790 of the Commission's regulations and in conjunction with the application of Wisconsin Public Service Corporation for withholding this information.

The information for which proprietary treatment is sought is contained in the following documents:

CEN-413-P, "Kewaunee Steam Generator Tube Repair Using Leak Tight Sleeves," January 1992.

These documents have been appropriately designated as proprietary.

I have personal knowledge of the criteria and procedures utilized by Combustion Engineering in designating information as a trade secret, privileged or as confidential commercial or financial information.

Pursuant to the provisions of paragraph (b) (4) of Section 2.790 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the

information sought to be withheld from public disclosure, included in the above referenced document, should be withheld.

1. The information sought to be withheld from public disclosure, which is owned and has been held in confidence by Combustion Engineering, concerns the design, manufacture, installation, and testing of the steam generator tube welded sleeve for repairing degraded tubes.

2. The information consists of test data or other similar data concerning a process, method or component, the application of which results in substantial competitive advantage to Combustion Engineering.

3. The information is of a type customarily held in confidence by Combustion Engineering and not customarily disclosed to the public. Combustion Engineering has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in confidence. The details of the aforementioned system were provided to the Nuclear Regulatory Commission via letter DP-537 from F. M. Stern to Frank Schroeder dated December 2, 1974. This system was applied in determining that the subject document herein is proprietary.

4. The information is being transmitted to the Commission in confidence under the provisions of 10 CFR 2.790 with the understanding that it is to be received in confidence by the Commission.

5. The information, to the best of my knowledge and belief, is not available in public sources, and any disclosure to third parties has been made pursuant to regulatory provisions or proprietary agreements which provide for maintenance of the information in confidence.

6. Public disclosure of the information is likely to cause substantial harm to the competitive position of Combustion Engineering because:

   a. A similar product is manufactured and sold by major pressurized water reactor competitors of Combustion Engineering.

   b. Development of this information by C-E required tens of thousands of manhours and millions of dollars. To the best of my knowledge and belief, a competitor would have to undergo similar expense in generating equivalent information.

   c. In order to acquire such information, a competitor would also require considerable time and inconvenience to develop the methodology for steam generator tube repair using leak tight sleeves for degraded tubes.

d. The information required significant effort and expense to obtain the licensing approvals necessary for application of the information. Avoidance of this expense would decrease a competitor's cost in applying the information and marketing the product to which the information is applicable.

e. The information consists of analyses of the methodology used to repair steam generator tubes using leak tight sleeves, the application of which provides a competitive economic advantage. The availability of such information to competitors would enable them to modify their product to better compete with Combustion Engineering, take marketing or other actions to improve their product's position or impair the position of Combustion Engineering's product, and avoid developing similar data and analyses in support of their processes, methods or apparatus.

f. In pricing Combustion Engineering's products and services, significant research, development, engineering, analytical, manufacturing, licensing, quality assurance and other costs and expenses must be included. The ability of Combustion Engineering's competitors to utilize such information without similar expenditure of resources may enable them to sell at prices reflecting significantly lower costs.

g. Use of the information by competitors in the international marketplace would increase their ability to market nuclear steam supply systems by reducing the costs associated with

their technology development. In addition, disclosure would have an adverse economic impact on Combustion Engineering's potential for obtaining or maintaining foreign licensees.

Further the deponent sayeth not.

S. A. Toelle

S. A. Toelle
Manager
Operating Reactor Licensing

Sworn to before me
this 2 day of JANUARY, 1992

Suzann Smith

Notary Public

My commission expires: 8/31/96

ATTACHMENT 4

To

Letter from C. R. Steinhardt (WPSC) to Document Control Desk (NRC)

Dated

January 27, 1992

Proposed Amendment No. 106

Combustion Engineering Report
"Test Report in Load Cycle Test of Axial
Tube End Cracks in Welded Sleeve/Tube Samples"
January, 1992