

NORTHEAST UTILITIES

THE CONNECTICUT LIGHT AND POWER COMPANY
THE HARTFORD ELECTRIC COMPANY
RESIDENTIAL ELECTRIC COMPANY
NORTHEAST WATER POWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

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December 18, 1978

Docket No. 50-336

Director of Nuclear Reactor Regulation
Attn: Mr. R. Reid, Chief
Operating Reactors Branch #4
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Reference: (1) R. Reid letter to D. C. Switzer dated April 19, 1978.

Gentlemen:

Millstone Nuclear Power Station, Unit No. 2
Sleeved CEA Guide Tube Inspection Program

In Reference (1), the Commission issued Amendment No. 38 to Facility Operating License No. DPR-65, which included authorization for Cycle 2 operation with sleeved guide tubes for certain fuel assemblies. Reference (1) also required that Northeast Nuclear Energy Company (NNECO) provide an evaluation program including planned inspections of CEA guide tubes in order to assess the performance of the sleeved guide tubes. Accordingly, CEN-104(N)-P, Millstone Unit No. 2 Sleeved Guide Tube Inspection Program, is attached, which discusses the program objectives, criteria for assembly selection and examination program details. The inspection program has been designed to address all aspects of sleeved guide tube operation to confirm satisfactory performance during Cycle 2 and to demonstrate the acceptability of continued use of sleeved guide tubes during Cycle 3. The proposed inspection program will include:

- (1) Bobbin coil eddy current testing of certain assemblies in high wear locations (as identified by the inspections which followed Cycle 1) prior to movement of sleeved fuel assemblies.
- (2) Azimuthal eddy current inspection of bundles in high wear locations to quantify the wear experienced during Cycle 2. Some of these assemblies will be bundles which are scheduled to be relocated under CEA's during Cycle 3 operation. The number of those assemblies inspected will depend on initial inspection results. The degree of wear that may be expected to occur during Cycle 3 will be estimated.
- (3) Visual examination of sleeved assemblies that were visually examined during the last refueling outage to confirm guide tube integrity after one operating cycle.

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- (4) Pull tests of sleeves in a discharged assembly to verify mechanical integrity of the sleeve-guide tube joint. The possibility of further destructive examinations of a discharge assembly is also being considered.
- (5) Examinations of a selected number of the CEA's themselves to verify test results which have indicated negligible wear.

The specific bundles which are candidates for examination are provided in Attachment 1. Bundles scheduled for discharge will be given lower priority for examination.

Criteria are being developed in more detail to determine the degree of wear (as indicated by eddy current testing) which is acceptable for, a) fuel movement, b) reinsertion in the core in a wear location, i.e., under a CEA, and c) reinsertion in the core in a location which is not under a CEA. NNECO will inform the Staff of those acceptance criteria in subsequent correspondence.

The above points and the attached evaluation program describe a well-balanced program which will adequately serve to confirm the acceptability of CEA guide tube sleeves. NNECO has intentionally structured this program to provide the flexibility required to minimize critical path time and to accommodate other refueling outage priorities while still adequately evaluating the performance of sleeved guide tubes. Combustion Engineering has completed a 500-hour test program in the TF-2 hot flow loop on a full scale sleeved fuel assembly and CEA. The results of that test have indicated virtually no wear (<.1 mil) on the chrome-plated guide tube sleeve. On the basis of that test, NNECO and CE expect very little wear of the sleeve and certainly do not expect any wear of the guide tube itself. This consideration is dominant in the determination of the number of bundles under consideration for inspection. Should our anticipations be realized during initial examination efforts, inspection of greater numbers of sleeved assemblies would be clearly unwarranted. Therefore, it is the intention of NNECO to fulfill the program objectives as outlined in the attachment and allow the examination program to evolve as the results of the initially inspected assemblies become available.

Concerning the guide tube arrangement for the Cycle 3 core previously discussed, several perturbations have been encountered. Our intent, as discussed in our meeting of November 21, was to structure the Cycle 3 core as follows:

- a) Employ 12 presently sleeved assemblies under CEA's (8D's and 4C's)
- b) Sleeve 57 additional assemblies for use in CEA locations (5B's, 12C's, 28D's, and 12E's)
- c) Employ 4 assemblies of the reduced guide tube flow design under CEA's (4E's). These are presently scheduled for use under CEA Group 7.
- d) Sleeve 28 Batch E assemblies for use in dual CEA and instrumented locations.
- e) Use the reduced flow design for the remaining 40 Batch E assemblies not under CEA's for Cycle 3.

Upon further examination of this arrangement, it became apparent that such a distribution may not optimize fuel management concerns for future cycles. Therefore, this configuration is still under study and may be altered somewhat. NNECO will keep the Staff informed of developments in this area.

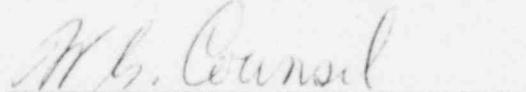
NNECO has reviewed this submittal pursuant to the requirements of 10CFR170 and has determined that no fee is required. The basis for this determination is that this program is a continuation of an issue which developed prior to the effective date of 10CFR170.

Due to the proprietary nature of the material contained in CEN-104(N)-P, NNECO requests that CEN-104(N)-P be withheld from public disclosure in accordance with the provisions of 10CFR2.790 and that this material be safeguarded. The reasons for the classification of this material as proprietary are delineated in the enclosed affidavit provided by Combustion Engineering. Copies of the non-proprietary version of this document are also provided.

It is our understanding that the attached program fulfills the Staff's request documented in Reference (1).

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY



W. G. Counsil
Vice President

Attachment

AFFIDAVIT PURSUANT

TO 10 CFR 2.790

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

I, A. E. Scherer depose and say that I am the Manager, Licensing of Combustion Engineering, Inc., duly authorized to make 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 Northeast Utilities for withholding this information.

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

Millstone Unit 2, Sleeved Guide Tube Inspection Program CEN-104(N)-P.
This document has 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 is details of the Sleeved Guide Tube Inspection Program, which is owned and has been held in confidence by Combustion Engineering.

2. The information consists of test data or other similar data concerning a process, method or component, the application of which results in a 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 documents herein are 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 reactors competitors of Combustion Engineering.

b. Development of this information by C-E required thousands of man-hours of effort and hundreds of thousands 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 related to obtaining access to test reactor facilities and conducting extensive in-pile testing.

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 specific inspection details, 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.

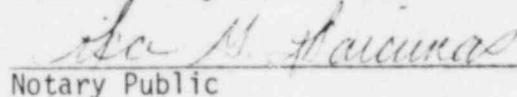


A. E. Scherer

Manager, Licensing

Sworn to before me

this 14th day of December 1978



Ida M. Haunras
Notary Public

IDA M. HAUNRAS, NOTARY PUBLIC
State of California, No. 64192
Commission Expires March 31, 1983