

PDR

AUG 26 1974

K. R. Goller, Assistant Director for Operating Reactors, L

WRITTEN RESPONSE TO MONTICELLO INTERROGATORIES

Plant Name: Monticello
 Licensing Stage: OR
 Project No.: NA
 Responsible Branch: ORB #2
 and Project Manager: J. J. Shea
 Requested Completion Date: August 29, 1974
 Description of Response: Written Response
 Technical Review Branch Involved: Core Performance Branch
 Reference: 1) Letter from L. Rubenstein to V. Stello, "TAR Request No. ORB-2-115" dated August 20, 1974

50-263

Enclosed is the response to the subject technical assistance request. Mr. S. Kim suggested to Mr. J. Shea and Mr. Shea agreed that interrogatory No. 13 may be best prepared by the Operating Reactors Branch since it concerns specific plant experience.

for P.F. Ross
 Victor Stello, Jr., Assistant Director
 for Reactor Safety
 Directorate of Licensing

Enclosure:
 As stated

cc: S. Hanauer
 A. Giambusso
 F. Schroeder
 V. Stello
 W. McDonald
 J. Shea
 S. Kim
 L. Rubenstein
 D. Ross
 E. Leins
 D. Ziemann
 V. Stello
 Central File
 CPB Reading
 L. Reading

MEMO

OFFICE	CPB:L	CPB:R	CPB:L	AD/RS
SURNAME	SBKim:esm	LSRubenstein	DFRoss	VStello
DATE	8/24/74	8/24/74	8/23/74	8/26/74



UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

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EVALUATION OF OPERATING EXPERIENCES
PROPOSED TESTING AND CRITERIA

12. In response to an AEC request, the General Electric Co. (GE) agreed to the surveillance program on 8x8 fuel bundle behavior described in the letter from J. Hinds of GE to V. Stello of Reactor Safety dated February 4, 1974. The program includes measurements of key geometric dimensions as well as routine sipping, visual inspections and non-destructive tests. About ten fuel rods are pre-characterized before irradiation. This fuel bundle has been in service since refueling last spring. At the next refueling outage a complete inspection will be performed in the storage pool on the removable rods. An examination for unusual features such as fretting, hydriding blisters, and dimensional changes will be made. The program is flexible and any rods with abnormalities can be examined further. Northern State Power Company has agreed to participate with GE in the above surveillance program. GE will also obtain the fuel operating power history for the evaluation. The data and evaluation of the 8x8 lead bundle will be submitted to the Staff for review.

At the time of inspection three criteria will be used as a measure of satisfactory fuel assembly performance. They are pin diametral changes of less than 1.0% cladding strain measured in terms of diameter change, less than 0.030 inches of rod deflection between two spacer grids, and fretting wear of less than 10% of the cladding wall thickness.

15. Quality Assurance

New 8x8 fuel assemblies undergo rigorous Quality Assurance inspections and audits which are conducted by GE plant and AEC Regulatory Operation and utility representatives.

At the GE plant, QA concerns include material acceptability, process and product conformance, as well as shipping test performance. Approximately 190 key quality manufacturing activities are monitored and evaluated. Details of the QA process may be found in the affidavit of Mr. J. E. Bergman of GE dated March 29, 1974 to the Pilgrim hearing board.

In addition, Technical Review requested Regulatory Operations for an audit of the GE fuel and cladding manufacturing process and provided a list of product and process characteristics for special considerations. RO inspectors spent several days at the GE, Wilmington, North Carolina plant site. The following are a partial list of the items considered during the inspection.

- Fill Gas Composition and Pressure
- Fuel Stack Length
- Plenum Volume
- Fuel Rod Enrichment Verification
- Fuel Rod Moisture
- Pellet Diameter
- Surface Finish
- Pellet Moisture

Sorbed Gas Content
Pellet Enrichment
Pellet Density
Cladding Wall Thickness
Cladding O.D.
Cladding I.D.
Ovality
Eccentricity
I.E. Surface Finish
Surface Defects
Tubing Strength & Chemistry Characteristics
Young's Modulus
Coefficient of Thermal Expansion

In addition, the Regulatory Operation Regional Office performed two audits of the GE fuel manufacturing process. As a result of the first audit eight corrective actions were taken. Five actions concern such items as rod calibration, personnel, more procedures and documentation. They were all corrected. The remaining three items were the design area, and addressed the design control system and documentation. A second and more recent audit has been completed and is being evaluated at this time. Regulatory Operations was also present at the time of refueling.