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J. Heltemes, AEOD

Docket No. 50-336

Mr. W. G. Counsil, Vice President
Nuclear Engineering & Operations
Northeast Nuclear Energy Company
P. O. Box 270
Hartford, Connecticut 06101

Dear Mr. Counsil:

In our continuing review of your March 4, 1982 submittal regarding Measurement Uncertainties at Millstone, Unit No. 2, we find that the information requested in the enclosure is necessary to complete the review.

In recent discussions with your staff (Mr. Michael Cass), a mutually agreed upon schedule for your submittal of this requested information has been determined. Therefore, the review schedule with Batelle Pacific Northwest Laboratories and our Core Performance Branch has been revised to expect your response within 60 days from the date of this letter.

The information requested affects fewer than 10 respondents; therefore OMB clearance is not required under P.L. 96-511.

Sincerely,

Original signed by

Robert A. Clark, Chief
Operating Reactors Branch #3
Division of Licensing

Enclosure:
As stated

cc: w/enclosure
See next page

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| OFFICE | ORB #3 | ORB #3 | ORB #3 | | | | |
|---|---|---|---|---|---|---|---|
| SURNAME | Kreutzer | Conner/tem | RAClark | | | | |
| DATE | 8/19/82 | 8/19/82 | 8/19/82 | | | | |

Northeast Nuclear Energy Company

cc:

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ATTN: Under Secretary Energy
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REQUEST FOR ADDITIONAL INFORMATION
NORTHEAST NUCLEAR ENERGY COMPANY
MILLSTONE NUCLEAR POWER STATION, UNIT NO. 2
DOCKET 50-336

1. In some cases in your response, uncertainties which are not independent have been combined through the RMS technique. The RMS technique requires that the uncertainty contributions be independent. If they are dependent, their combined effect should be assessed through deterministic methods.

   Three cases so identified are the feedwater venturi area expansion factor, feedwater density and feedwater enthalpy. These three factors are each dependent upon the feedwater temperature and are used in determining the core thermal power. Similarly, the feedwater density and steam enthalpy are both dependent upon steam generator pressure and are used in determining the core thermal power.

   Correctly combine these dependent uncertainties deterministically to find if the uncertainty in the core power falls within the value used in the safety analyses.

2. The reactor coolant flow calculation uses the core thermal power. What is the impact of the correct use of independent variables in determining core power uncertainty on the reactor coolant flow uncertainty?

3. The feedwater flow element fouling causes the calculated reactor power to be somewhat low at all times except immediately subsequent to an element cleaning. The use of this calculated power is conservative. However, the core flow determination also uses the calculated power. What is the affect of accounting for the fact that the calculated flow is low at all times except just after an element cleaning? Also, explain how the feedwater flow element is cleaned and how effective the cleaning method is.

4. Information is supplied in Appendix A to define instrument span drifts between calibrations. The data supplied are too few to support the assumption of a $2\sigma$ limit. Provide further historical data to confirm the $2\sigma$ assumption.

5. In general, uncertainties in computer A-D conversions, resistor values and calibration uncertainties are given with no substantiation. Presumably these are derived from calibration procedures and/or design specifications. What are the Quality Control and Quality Assurance procedures used to confirm the given values?

6. Provide results of the review of the total axial shape index uncertainty allowance.