

ENCLOSURE

Sandia National Laboratories

Albuquerque, New Mexico 87185

January 13, 1989

Mr. M. R. Hum
U. S. Nuclear Regulatory Commission
Materials Engineering Branch
Washington, DC 20555

Subject: Nozzle Sizing Study Meeting January 10-11, 1989

Dear Mr. Hum:

The Nozzle Sizing Study performed by Southwest Research Institute, Rochester Gas & Electric, Wisconsin Electric Power, and Electric Power Research Institute shows that any flaw sizing done by amplitude measurements will always be an approximation to the true size of the flaw. In most cases it will oversize the flaw due to beam spread. Using focused transducers reduces the beam spread contribution but does not eliminate it entirely. Using beam spread corrections reduces the measured size of the flaw, and it is only justified when the amplitude and metal path data of the reflected signal versus transducer travel are consistent with that of a single flaw of a given size at the location of the flaw in the vessel wall thickness. A presentation of this data must be required along with the beam spread correction data.

In my opinion sizing by 50% or 20% DAC with beam spread correction will only yield a conservative size of the true flaw size for very few flaw sizes, and for small flaws sizes it will underestimate the flaw size in most cases. The db drop method (independent of DAC calibration amplitudes) using focused transducers for flaw sizing is the most preferable since it can be used so that the most accurate yet conservative flaw size is obtained for large and small flaws in most cases.

From the data presented at the meeting, the most accurate sizing is accomplished by collecting data of edge diffracted waves from the geometric extremities of the flaw. Flaw size as computed from the time of flight measurements of the edge diffracted waves is independent of amplitude and yields a simple geometric construct of the flaw extremities as measured from known positions and angles of the transducer. The method is only applicable when automated UT data acquisition systems are being used; i.e., where the waveforms of the flaw echo and transducer positions are digitized at small incremental steps of the transducer over the entire area of the flaw. These data will be available at the

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Ginna and Point Beach Reactor Vessel examinations since the SWRI Enhanced Data Acquisition System (EDAS) will be used. However, the edge diffracted signals are not always able to be detected so that it is not applicable to all flaws detected. Every attempt should be made in the examinations at Ginna and Point Beach to obtain the edge diffracted signals.

I am pleased to see that the utilities are taking the initiative to develop techniques above minimum ASME Code requirements which allow a comprehensive flaw sizing calculation to be made using all of the ultrasonic information available through state-of-the-art techniques.

Sincerely,


John H. Gieske

JHG:jk

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Distribution:
→ Docket 50-244
PD I-3 Reading
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FEB 08 1989

DOCKET NO(S). 50-244
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SUBJECT: R. E. Ginna Nuclear Power Plant

The following documents concerning our review of the subject facility are transmitted for your information.

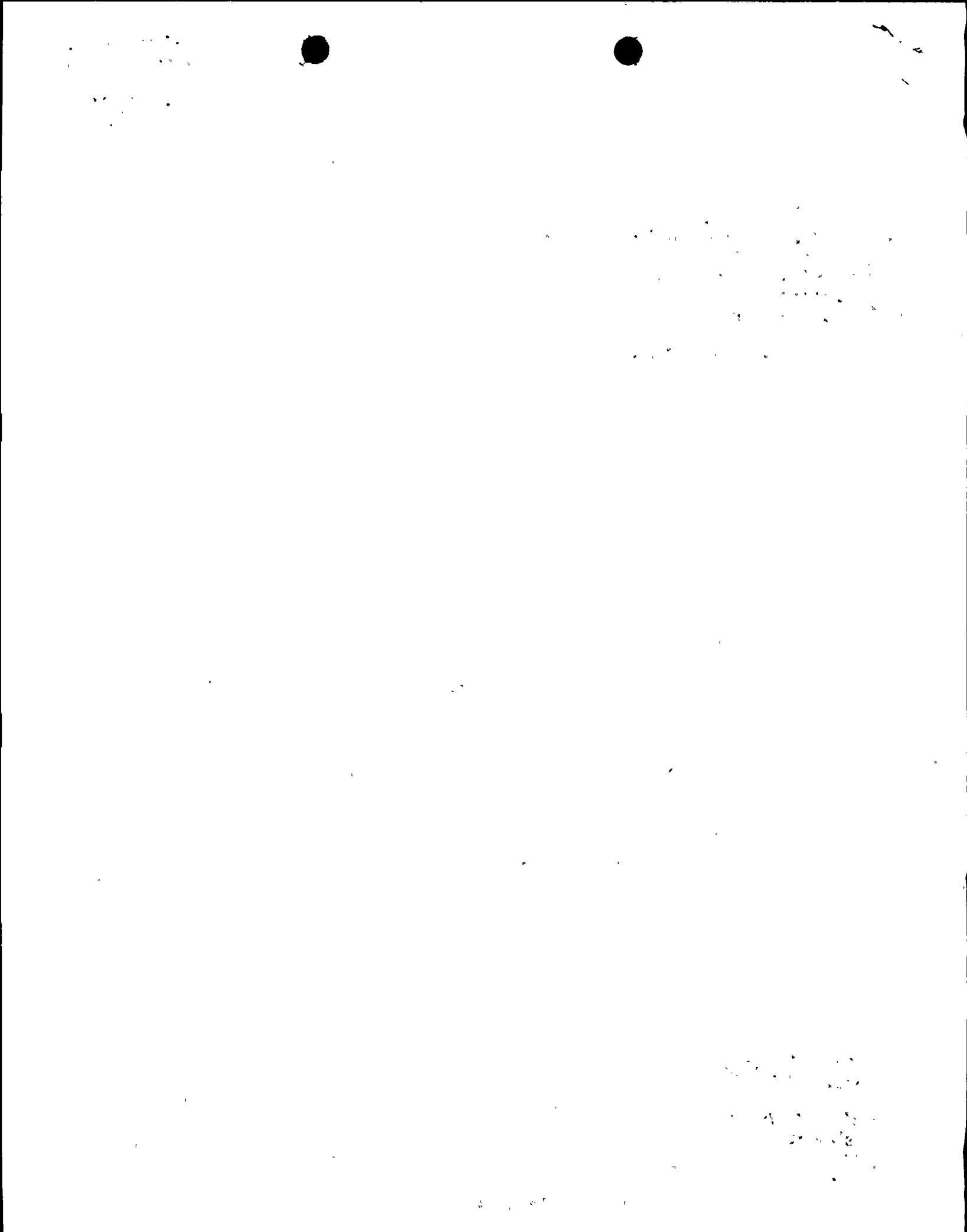
- ☐ Notice of Receipt of Application, dated _____.
- ☐ Draft/Final Environmental Statement, dated _____.
- ☐ Notice of Availability of Draft/Final Environmental Statement, dated _____.
- ☐ Safety Evaluation Report, or Supplement No. _____ dated _____.
- ☐ Environmental Assessment and Finding of No Significant Impact, dated _____.
- ☐ Notice of Consideration of Issuance of Facility Operating License or Amendment to Facility Operating License, dated _____.
- ☒ Bi-Weekly Notice; Applications and Amendments to Operating Licenses Involving No Significant Hazards Considerations, dated 2/1/89 [see page(s)] 5175.
- ☐ Exemption, dated _____.
- ☐ Construction Permit No. CPPR-_____, Amendment No. _____ dated _____.
- ☐ Facility Operating License No. _____, Amendment No. _____ dated _____.
- ☐ Order Extending Construction Completion Date, dated _____.
- ☐ Monthly Operating Report for _____ transmitted by letter dated _____.
- ☐ Annual/Semi-Annual Report- _____
_____ transmitted by letter dated _____.

Office of Nuclear Reactor Regulation

Enclosures:
As stated

cc: with enclosure
See Attached Sheet

OFFICE	NRR/RP..I./II/PD.I-3.....						
SURNAME	MRushbrook.....						
DATE	2/8/89.....						



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R. E. Ginna Nuclear Power Plant

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