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ALEXICH, M. P. Indiana & Michigan Electric Co.
RECIP. NAME RECIPIENT AFFILIATION
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SUBJECT: Submits addl info & requests concurrence re compliance w/ requirements in NUREG-0737 Section II.F.1, Attachments 1,2 & 3 concerning radiation monitoring sys.

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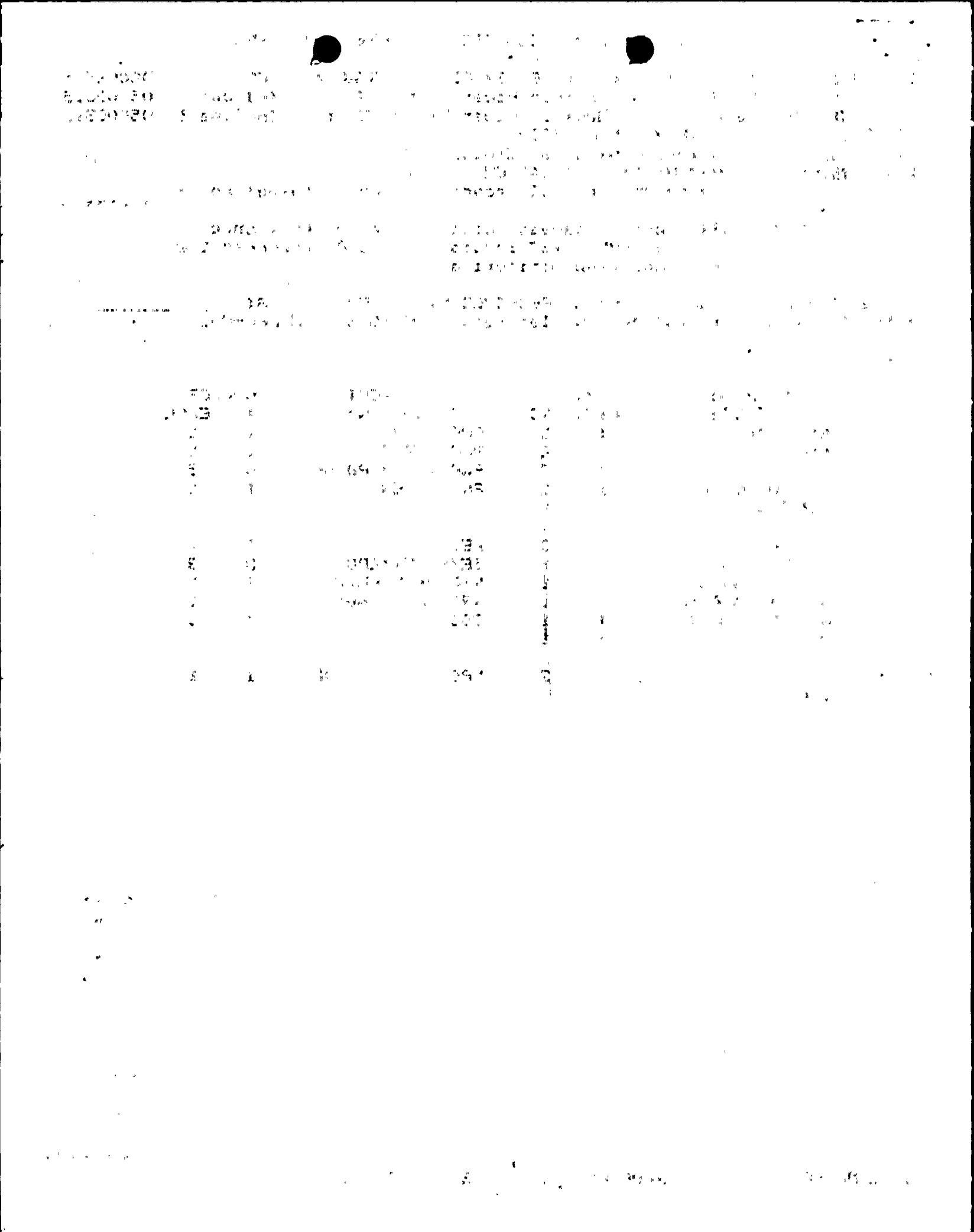

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March 6, 1987
AEP:NRC:0678AD

Donald C. Cook Nuclear Plant Unit Nos. 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
NUREG-0737, SECTION II.F.1
ADDITIONAL INFORMATION ON RADIATION MONITORING SYSTEM

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Dear Sirs:

The purpose of this letter is to provide further information and request concurrence from you with regard to our compliance with certain requirements found in NUREG-0737, Section II.F.1, Attachments 1, 2, and 3.

Our consultant has completed the primary calibration for the Eberline SPING 3/4 Radiation Monitoring System which is used for noble gas effluent monitoring in accordance with NUREG-0737, Section II.F.1, Attachment 1. In summary, our radiation monitoring system has a total operating range of 5.8 E-7 to 1.6 E+4 uci/cc (dose equivalent Xe-133) at a time of 15 minutes post accident with a minimum of one decade overlap between detectors throughout the first 31 days post accident. The range expands to 7.0 E-7 to 1.5 E+5 uci/cc at 31 days post accident while still maintaining a one-decade overlap between detectors. After 33 days, the overlap between the low and mid-range detectors decreases to less than one decade. This trend continues to a point at approximately 75 days post accident where Kr-85 is dominant and there is no overlap.

NUREG-0737, Section II.F.1, Attachment 2 requires the D. C. Cook Plant to have the capability to maintain isokinetic flow conditions with variations in duct design flow velocity of ± 20% for iodine/particulate sampling. Our present system for sampling the unit vent effluents has this capability. However, the flow control device for adjusting the sample flow is manually operated and located in an area that could be subjected to hazardous levels of radiation during an accident and thus could be an ALARA concern.

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Using the guidelines provided in ANSI 13.1, we performed an analysis for anisokinetic sampling for our system. We assumed for this analysis that the unit vent flow is at 100% of its design flow rate but that the sample flow is set at a constant flow rate to achieve approximate isokinetic conditions at 80% of the unit vent design flow. The results indicate that the error due to anisokinetic sampling at these settings would be approximately one percent.

Since there is an ALARA concern for manually adjusting the flow control device, and since it would be costly to automate the flow control device to achieve such a small accuracy margin, we request your concurrence to set the sample flow regulator that will be used only in an accident mode at a constant flow rate to achieve approximate isokinetic conditions at 80% of the unit vent flow rate.

NUREG-0737, Section II.F.1, Attachment 3 requires our containment high-range radiation monitors to have certified calibration of each detector for at least one point per decade of range between 1R/hr and 10^3 R/hr. In reviewing our vendor's calibration certifications, it was noted that the vendor tested each detector for one point per decade of the range between 10 R/hr and 10^4 R/hr. Since these detectors are designed for extremely high levels of radiation, it is our opinion that they have been properly tested and meet the intent of NUREG-0737. We request your concurrence regarding this matter.

This document has been prepared following Corporate procedures which incorporate a reasonable set of controls to insure its accuracy and completeness prior to signature by the undersigned.

Very truly yours,

M. P. Alexich
Vice President

cm

Attachments

cc: John E. Dolan
W. G. Smith, Jr. - Bridgman
R. C. Callen
G. Bruchmann
G. Charnoff
NRC Resident Inspector - Bridgman
J. G. Keppler - Region III