



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555
August 13, 1990

Docket Nos. 50-315
and 50-316

Mr. Milton P. Alexich
Indiana Michigan Power Company
c/o American Electric Power
Service Corporation
1 Riverside Plaza
Columbus, Ohio 43216

Dear Mr. Alexich:

SUBJECT: DONALD C. COOK NUCLEAR PLANT UNITS 1 AND 2 - USE OF EBERLINE SPING
3/4 RADIATION MONITORING SYSTEM TO MEET REQUIREMENTS OF NUREG-0737
(TAC NOS. 65058 AND 65059)

In your letter dated March 6, 1987 (AEP:NRC:0678AD) you requested concurrence from the staff concerning your use of the Eberline SPING 3/4 noble gas and particulate effluent monitoring system to meet the requirements of NUREG-0737, Section II.F.1, Attachments 1 and 2. Additionally, you requested our concurrence that the calibration certification of your containment high-range radiation monitors meets the requirements of NUREG-0737, Section II.F.1, Attachment 3. After a review of this and other subsequent submittals and telephone conversations with your staff, we have reached the following conclusions with respect to your proposed use of the SPING.

We have reviewed the calibration data for your SPING noble gas detectors as provided by Watts-Bar Jones. The detector overlap, sensitivity and linearity appear to be acceptable throughout all ranges. We therefore agree that your use of these noble gas monitors will meet the requirements of NUREG-0737, Section II.F.1, Attachment 1.

For ALARA reasons, you propose to leave the sample inlet damper in the post accident position during all operations. In this configuration, the sample flow for the SPING on both units will be set to approximately 41 slpm (standard liters per minute). We understand that due to anisokinetic sampling effects, this flow rate will result in an approximate 6% overestimate in the effluent release rate during normal operating conditions (assuming a particle size distribution as specified in your calculations using ANSI N.13.1), and an approximate 16-19% overestimate during maximum flow conditions. However, during post accident conditions (80% of design vent flow as defined in NUREG-0737) the sample flow will be isokinetic and the concentration of effluent in the sample line will be accurately represented.

You have further stated that your unit vent filters will remove all particles greater than 2 microns in size. Assuming a reasonable effectiveness for your filters (95% or greater), the anisokinetic sampling effects are reduced significantly, resulting in a maximum overestimate of activity released which is less than approximately 3% during maximum flow conditions, and less than 1% during normal operating conditions. Also assuming this screening effect,

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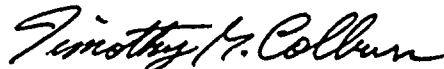
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particulate concentration in the effluent samples during post accident design flow will remain isokinetic, resulting in accurate sampling. The effects of temperature changes in the sample line are also minimized by this filtration. We therefore agree that your proposed use of the SPING for particulate effluent monitoring satisfies the requirements of NUREG-0737, Section II.F.1, Attachment 2.

The staff has reached the following conclusion with respect to the calibration certification of your containment high-range radiation monitors. NUREG-0737, Section II.F.1, Attachment 3 requires that a calibration certification of all detectors be performed for at least one point per decade of range between 10^3 R/hr and 10^4 R/hr. You have stated that your detectors have been calibration certified at one point per decade between 10^3 R/hr and 10^4 R/hr. Additionally, NUREG-0737, Section II.F.1, Attachment 3 requires that each detector be calibrated in situ for at least one decade below 10^4 R/hr. Provided that this in situ calibration has been performed for each detector, the staff concludes that your containment high range radiation monitors meet the intent of NUREG-0737, Section II.F.1, Attachment 3 with respect to calibration.

Based upon the information you have provided, we concur with your assertion that the SPING does meet the requirements of NUREG-0737, Section II.F.1, Attachments 1 and 2, provided that the system is operated as you have described. We also concur with your assertion that the calibration range of your containment high-range radiation monitors meets the intent of NUREG-0737, Section II.F.1, Attachment 3 and is therefore acceptable. Implementation of this item is considered complete.

Sincerely,



Timothy G. Colburn, Sr. Project Manager
Project Directorate III-1
Division of Reactor Projects - III,
IV, V & Special Projects
Office of Nuclear Reactor Regulation

Mr. Milton Alexich
Indiana Michigan Power Company

Donald C. Cook Nuclear Plant

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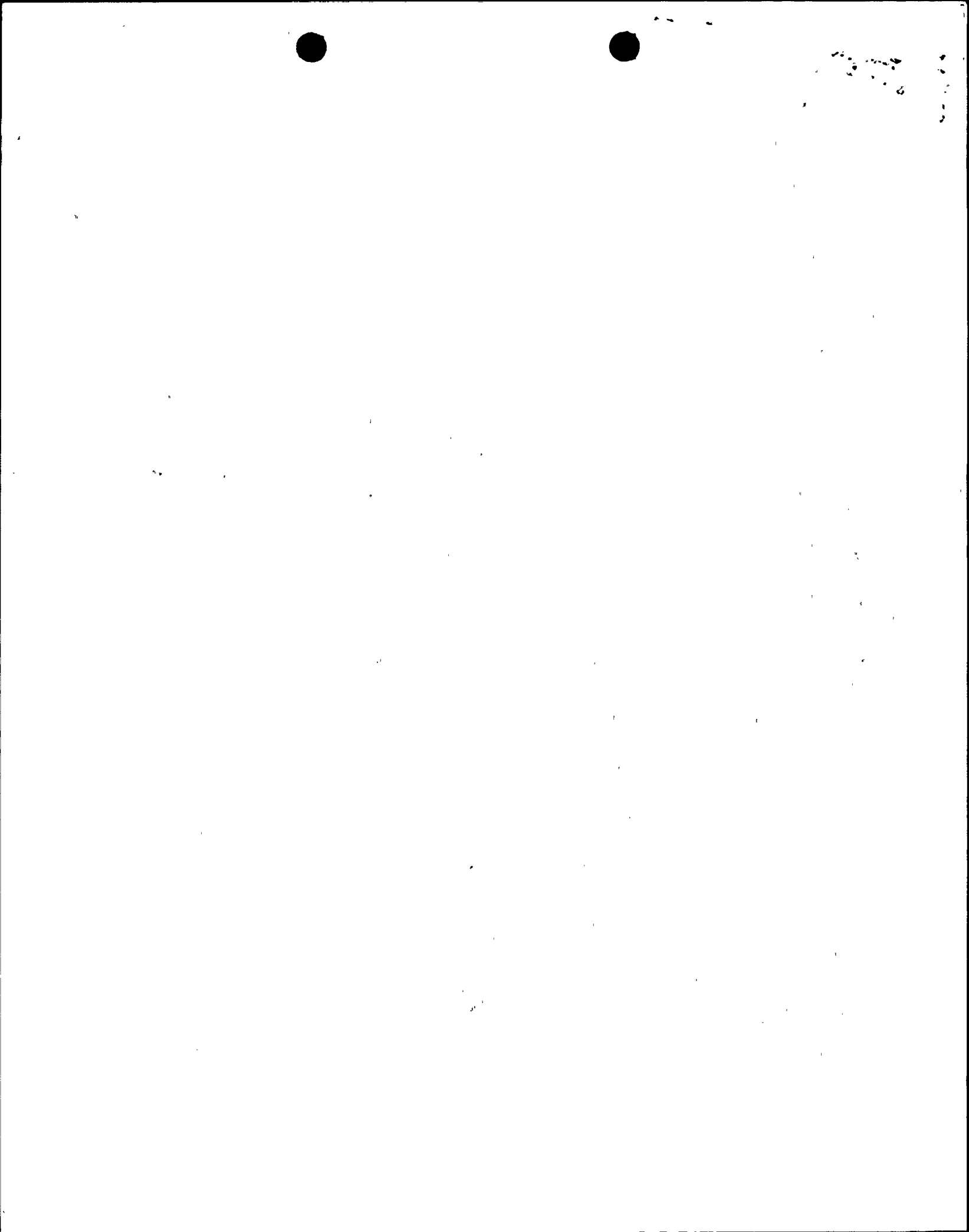
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particulate concentration in the effluent samples during post accident design flow will remain isokinetic, resulting in accurate sampling. The effects of temperature changes in the sample line are also minimized by this filtration. We therefore agree that your proposed use of the SPING for particulate effluent monitoring satisfies the requirements of NUREG-0737, Section II.F.1, Attachment 2.

The staff has reached the following conclusion with respect to the calibration certification of your containment high-range radiation monitors. NUREG-0737, Section II.F.1, Attachment 3 requires that a calibration certification of all detectors be performed for at least one point per decade of range between 10 R/hr and 10⁵ R/hr. You have stated that your detectors have been calibration certified at one point per decade between 10 R/hr and 10⁴ R/hr. Additionally, NUREG-0737, Section II.F.1, Attachment 3 requires that each detector be calibrated in situ for at least one decade below 10 R/hr. Provided that this in situ calibration has been performed for each detector, the staff concludes that your containment high range radiation monitors meet the intent of NUREG-0737, Section II.F.1, Attachment 3 with respect to calibration.

Based upon the information you have provided, we concur with your assertion that the SPING does meet the requirements of NUREG-0737, Section II.F.1, Attachments 1 and 2, provided that the system is operated as you have described. We also concur with your assertion that the calibration range of your containment high-range radiation monitors meets the intent of NUREG-0737, Section II.F.1, Attachment 3 and is therefore acceptable. Implementation of this item is considered complete.

Sincerely,

Original signed by

Timothy G. Colburn, Sr. Project Manager
Project Directorate III-1
Division of Reactor Projects - III,
IV, V & Special Projects
Office of Nuclear Reactor Regulation

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