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F. L. Clayton, Jr.
Senior Vice President
Flintridge Building



January 13, 1984

Docket Nos. 50-348

~~50-364~~

Director, Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Mr. S. A. Varga

Joseph M. Farley Nuclear Plant - Units 1 and 2
10CFR20; Respiratory Protection; Iodine Filter Exemption Request

Gentlemen:

Alabama Power Company's Farley Nuclear Plant, Unit 1 will commence an extended outage in February, 1984. Major work to be accomplished in addition to refueling includes lower control rod guide tube split pin replacement and steam generator tube sheet repair. It is also anticipated that significant levels of radioiodine will be encountered henceforth due to remaining contamination from a previous cycle in which failed fuel cladding was encountered. Satisfactory respiratory protection for radioiodine can be afforded by the use of air supplied or self contained breathing apparatuses; however, these appliances are cumbersome and contribute to worker fatigue and efficiency loss. The net result is increased man-rem exposure and a reduced personnel safety margin when compared to the use of air-purifying respirators which enhance worker comfort and allow greater mobility. We estimate that air-purifying respirators would enable a 25-50% reduction in the time required to conduct tasks requiring respiratory protection. Likewise, a 25-50% reduction in man-rem exposure would be realized for these tasks.

10CFR20, Appendix A, "Protection Factors for Respirators" does not recognize the use of air-purifying respirators for protection against radioiodine and footnote (c) specifically prohibits this practice. However, we are aware of research that has been accomplished to certify air-purifying respirators against radioiodine sponsored by the USNRC-Occupational Radiation Protection Branch and reported in NUREG-CR 3403.

We have communicated with Mr. Eric Beck of Mine Safety Appliance Company (MSA) who has provided test results, a proposed test protocol and a quality assurance sampling plan (attached) for the MSA 466220 GMR-I Canister that satisfies the recommended qualification process of NUREG-CR 3403.

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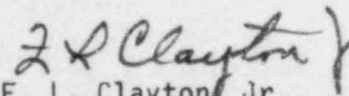
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Pursuant to 10CFR20.103(e) and 10CFR20.501, Alabama Power Company hereby applies for exemption to 10CFR20, Appendix A, footnote (c) to allow credit for a radioiodine protection factor in employing the MSA 466220 GMR-I Canister. The limitations and precautions noted in the attached MSA letter and NUREG-CR 3403 summarized below will apply:

1. protection factor =50
2. 8 hour maximum continuous use time after which the canister would be discarded.
3. not to be used in the presence of organic solvent vapors.
4. to be stored in sealed, humidity barrier packaging in a cool, dry environment.
5. service life to be calculated from the time of unsealing including periods of non-exposure.
6. to be used with a facepiece capable of providing protection factors greater than 100.
7. not to be used in challenge concentrations of total organic iodine, including nonradiometric iodine greater than 1 ppm.
8. not to be used in environments greater than 110°F or 90% relative humidity.

Per 10CFR20.103(g), this letter represents notification of our intent to use the MSA 466220 GMR-I Canister 30 days from this date pending USNRC approval of this exemption request.

Yours very truly,


F. L. Clayton, Jr.

FLCJr/WCC:ddr-D37

cc: Mr. R. A. Thomas
Mr. G. F. Trowbridge
Mr. J. P. O'Reilly
Mr. R. E. Alexander
Mr. E. A. Reeves
Mr. W. H. Bradford

bcc: Mr. R. P. McDonald
Mr. O. D. Kingsley, Jr.
Mr. W. G. Hairston, III.
Mr. C. D. Nesbitt
Ms. E. J. Lock



Mine Safety Appliances Company • 600 Penn Center Boulevard • Pittsburgh, Pennsylvania 15235
412/273-5000

Writer's Direct Dial Number
412/273-5194

January 12, 1984

Alabama Power Company
600 North 18th Street
P.O. Box 2641
Birmingham, AL 35291

ATTN: Mr. Wayne Carr
Health Physics

Dear Wayne:

Enclosed are the results of the tests, from MSA Engineering, in accordance with the parameters agreed on in our recent meeting and subsequent telephone conversations.

Also enclosed is a summary of the proposed protocol for lot testing of the GMR-I Canister.

Based on our test results (assuming favorable variance consideration by the NRC), MSA would recommend the GMR-I #466220 for use in areas not exceeding 110°F 90% RH at <1 ppm CH₃I for up to one 8-hour shift. The canister must be discarded at the completion of each 8-hour shift (i.e. one use per canister).

If you need further information, please don't hesitate to call.

Sincerely,

A handwritten signature in dark ink, reading "Eric J. Beck", is written over the typed name.

Eric J. Beck
Nuclear Industry Specialist

car

Enclosure

GMR-I CANISTER TESTING

<u>Test Conditions</u>	<u>Average Inlet Concentration</u>	<u>Time</u>	<u>Outlet Concentration</u>
110°F 50% RH 64 Lpm	46 ppm	510 min.	< .03 ppm (below detection)
110°F 90% RH 64 Lpm	12 ppm	600 min.	< .003 ppm (below detection)
50°F 50% RH 64 Lpm	31 ppm	480 min.	< .003 ppm (below detection)
		510 min.	.03 ppm
		660 min.	.09 ppm

PROPOSED PROTOCOL FOR LOT TESTING OF THE MSA GMR-I CANISTER #466220

Summary

(Complete protocol has been sent to the NRC)

Challenge vapor: CH_3I

Challenge concentration: 25 ppm

Breakthrough concentration: 0.25 ppm

Flow rate: 64 L/min

Test temperature: $25 \pm 1^\circ\text{C}$

Test relative humidity: $85 \pm 2\%$

Equilibration: (a) none (as received)

(b) 85% RH, 64 L/min for 6 hours

No. of tests: 4 at each condition for a total of 8 per MIL STD-105