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Writers Direct Dial No.

United States Nuclear Regulatory Commission
Sealed Source Safety Section
Division of Industrial and Medical Nuclear Safety
Attn: Ujagar S. Bhachu
Two White Flint North
11545 Rockville Pike
North Bethesda, MD
20852

ASSIGNMENT NUMBER: 99-02 **April 26,2000**

Dear Mr. Bhachu,

This letter is in reply to your request for clarification of information that was previously submitted in letters dated 1/31/00, February 1999, and August 1999.

Issues:

1.0 General

1.1 Please demonstrate that external screws used to assemble the device are temper proof.

- Using the Guidance provided in Draft NUREG/CR-6642 " **Risk Analysis and Evaluation of Regulatory Options for Nuclear Byproduct Material Systems".**
  - Section 3.27.5 step 6 states that " **shielding is not an issue for these sources and access control is not worthwhile except for prevention of loss of the source."**
  - Section 3.27.5 Step 4. **"The key function is confinement."** MSA is using custom screws to hold the source housing together. **"The user is charged with not compromising the safety case of the instrument."**

- See attached photos of the mounted source housing inside the instrument case. It would take a deliberate act to remove the source housing, dismantle this housing and then a significant force would be needed to remove the pressed in source.
- As a permanent instrument, the risk for theft is minimal.

LOCATION: 300 Walden Road • Cranberry Township, PA 16066-5296

1.2 MSA device Registration Submission, dated February 24,1999 page 17 of 23 made a Reference to "Standard EPS..." formulas. Please provide a copy of the appropriate pages of reference 6 and 7. Please elaborate on the choice of X/Q of 1.3-E-3/m^3. Please clearly state your assumptions and the actual equations used in your calculations.

The X/Q value is taken from M.Eisenbud, Environmental Radioactivity, Academic Press, Third edition pages 66-70. These X/Q values are also cited in numerous EPA (NESHAPS Comply code) and NRC documents (Reg. Guide 4.2). In retrospect if we use the screening criteria as stated in the EPA's NESHAPS COMPLY Code. Which, states that Ni-63 levels must be higher than 140 millicuries in a gaseous form BEFORE a member of the public is expected to receive a dose greater than 10mrem. We can conclude that a 6-millicurie source even if it vaporizes completely will not pose a problem to the public without performing the calculations.

- Amount of material on site would be about 8 -16 units in various stages of production. 16 sources x 5 mCi = 80 mCi this amount is still lower than the limit of concern specified in the COMPLY code. The COMPLY CODE states that a level of 140 mCi must be present before a member of the public receives a dose greater than 10mrem.

Using the Information provided in Draft NUREG/CR-6642 " **Risk Analysis and Evaluation of Regulatory Options for Nuclear Byproduct Material Systems".**

Section 3.27.4

"The worker and public risks per device are seen to be very small. This is due to the low energy betas emitted by the GC sources, which can cause harm only if ingested or inhaled, and the low source strengths. For all risks to the worker or public, the maximum consequence calculated is well below that which would have any acute health effect. The evaluation of these events is based on limited data for the number of devices in use and lack of their involvement in accidents. The overall uncertainty in the accident risk is at least a factor of 10."

Section 3.27.5 Step 6

- **" As noted previously...This type of device simply presents little hazard."**
- **"According to the risk analysis, there is little reason to regulate gas chromatographs having only nickel source. Even the low end of the Public- Moderate dose range does not capture any sequences involving nickel."**

3.0 SAFETY ANALYSIS

3.1 Please confirm that:

- Under accident conditions (such as fire or explosion) associated with handling, storage, and use of devices it is unlikely that any person would receive an external; dose in excess of the dose limits to the appropriate organ as stipulated in 10CFR 32.51 (a) (2) (iii)

Using the Information provided in Draft NUREG/CR-6642 " **Risk Analysis and Evaluation of Regulatory Options for Nuclear Byproduct Material Systems".**

System 27 Section 3.27.5

Step 6. **"Fire prevention is an essential performance."**

- The buildings used to store the sources and devices during manufacture have sprinkler systems that activate at 74 degrees centigrade. Nickel vaporizes at about 1000 degrees centigrade. The loss and associated other risks from a fire would far exceed any reasonable quantification of the worth of the minor radiological impact presented in a risk assessment.

System 27 for Gas Chromatographs section 3.27.5

"Using the Regulatory Options Analysis and using the table 3.27-2b implies that the following statement will suffice."

- **"According to the risk analysis, doses from this system are very small, even under *accident* conditions."**

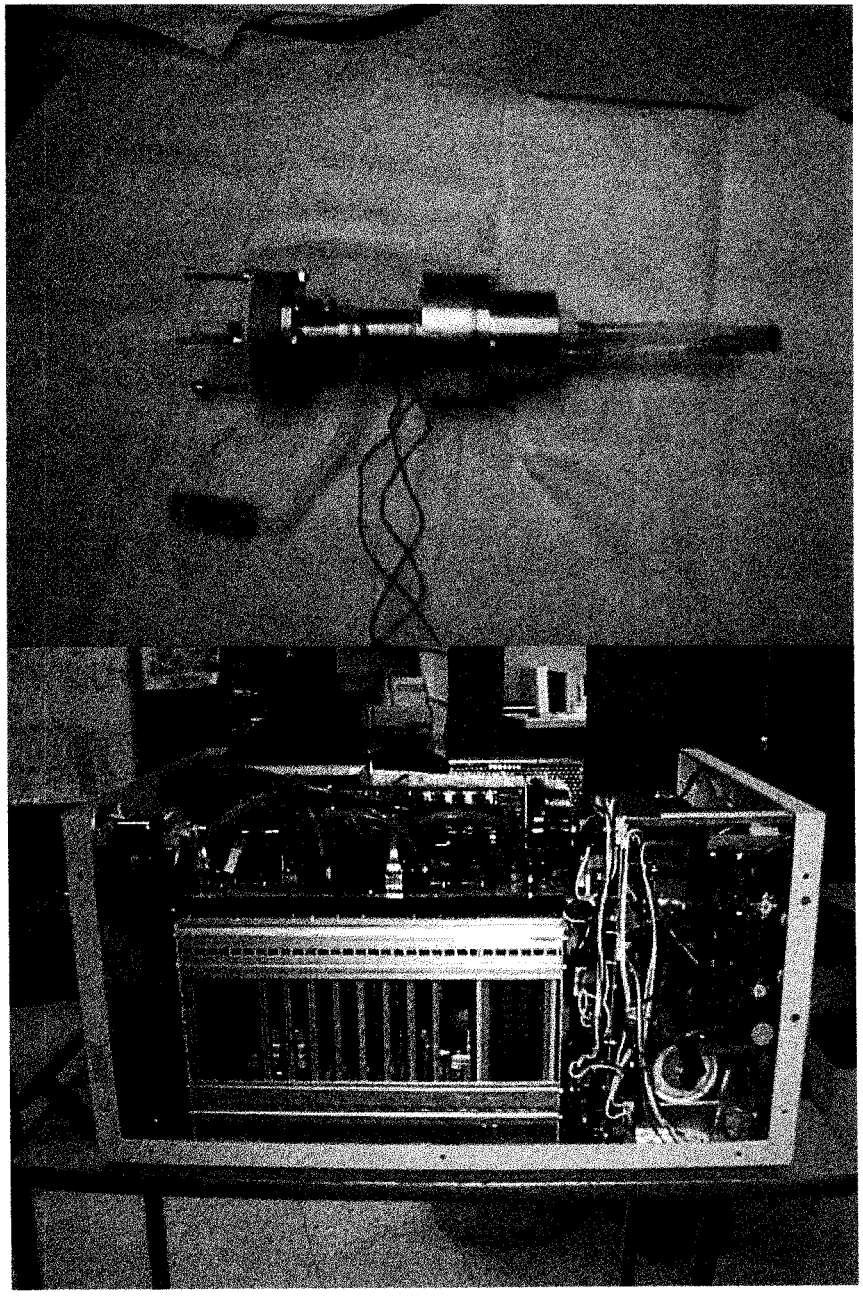
Enclosed find a signed copy of request for withholding information.

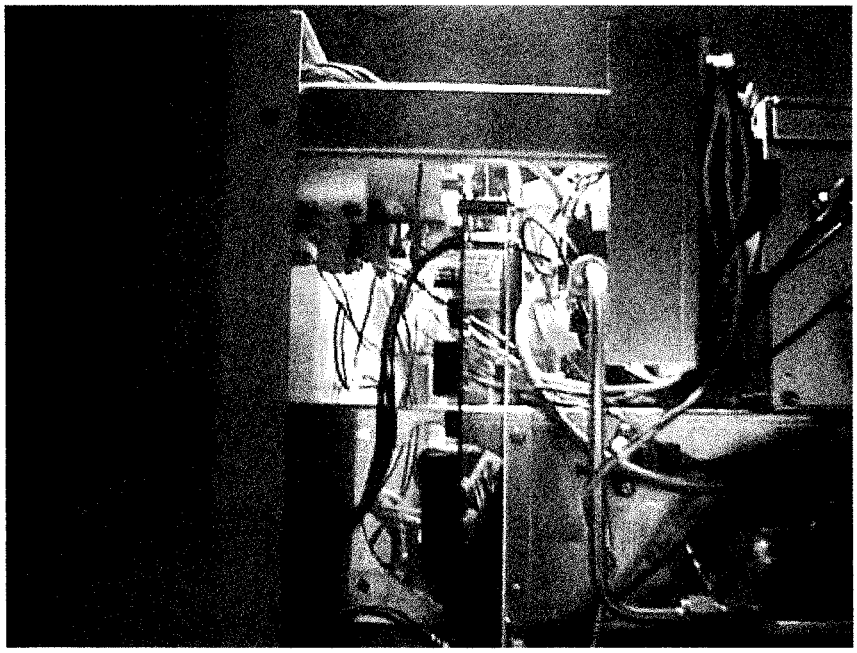
Please address all subsequent correspondence regarding this submittal to:

Mary T. McGinley
Radiation Safety Officer
PO Box 427
Pittsburgh, PA 15230
Phone: 724-776-8906
Email: mary.mcginley@MSAnet.com

Sincerely,

Mary T. McGinley
Radiation Safety Officer
Attachments





Enclosure 2

REQUEST FOR WITHHOLDING INFORMATION FROM PUBLIC DISCLOSURE MINE SAFETY APPLIANCE COMPANY. 03-ACAMS-SF/AF AND OEM-FIS SENSOR ASSEMBLY

By Mine Safety Appliance Company's (MSA) application dated February 24, 1999, MSA submitted an application for registration of Automatic Continuous Air Monitoring System (ACAMS). In a notarized affidavit signed by Mr. George R. McGee, indicated that the application contained proprietary drawings and information.

MSA stated that all MSA drawings referenced in the application should be considered exempt from mandatory public disclosure for these drawings contain trade secrets. More specifically MSA claimed that drawings contain designs, dimensions and tolerance that if released to the public will seriously and adversely impact their competitive advantage in the Field of Ion Spectrometry since MSA has spent Millions of dollars developing the FIS Technology and trade secrets contained in these drawings.

Section 2.790(b)1 of 10 CFR Part 2 requires that each request for withholding of information from the public must be accompanied by an affidavit that contains a full statement of the reasons on the basis of which it is claimed that the information should be withheld from the public. The section further states that the Commission will consider whether the information is of the type customarily held in confidence by the applicant.

In general, only that information which cannot be obtained through observations or measurements of components or documentation obtainable by the general public can be withheld as proprietary material. With regard to engineering drawings, information generally considered being proprietary includes information such as dimensional tolerances, technical specifications of materials, manufacturing notes or specific assembly directions. Any remaining information on the drawings would be released. In view of this you may elect to identify specific information on each drawing that you wish to withhold as proprietary, and provide nonproprietary versions in accordance with 10 CFR 2.790 (b) (1) (ii). To assist you we have identified the drawings that are considered proprietary.

Attachment 1 Part A, 03-ACAMS-SF/AF ASSEMBLY

Page 2. Bracket FIS SENSOR MM 10008366
Information shown Attachment 1, Part A, Page 2 can be easily acquired by a member of the public. This drawing does not contain material's specifications or tolerances. **Therefore, it cannot qualify as a proprietary item.**

Page 5. Base Sub Assembly MM 10006892
The majority of information on this drawing can be released to the public.
You may wish to include a revised version of this drawing in the non-proprietary package. The revised drawing need not include machining tolerances for two parts.

Page 6 Tube Inner MM 10002740

This drawing will be withheld from the public as a proprietary item.

Page 7 Base, PEEK MM 10002748
The contents of this drawing qualify it as a proprietary item.

Page 8. Base Sub Assembly Phase 1 MM 10006893
The contents of this drawing qualify it as a proprietary item.

Page 9. Guard Ring MM 10003399
The contents of this drawing qualify it as a proprietary item.

Your application does not list Attachment 9, Part A, Page 10. This drawing will be released to public.

Attachment 1 Part B

Page 3. OEM Sensor Sub Assembly Mark II MM 10004229
The contents of this drawing qualify it as a proprietary item.

Page 4. Sensor Base Sub Assembly MM 10004230
The majority of information on this drawing can be released to the public. You may wish to include a revised version of this drawing in the non-proprietary package. The revised drawing need not include machining tolerances for two parts.

Page 5. Base Insert MM 10004225
The contents of this drawing qualify it as a proprietary item.

Page 6. Tube outer Electrode MM 10002744
The contents of this drawing qualify it as a proprietary item.

Page 7. Sleeve for Peek Base MM 10002746
The contents of this drawing qualify it as a proprietary item.

Page 8. Tube Inner MM 10002740
The contents of this drawing qualify it as a proprietary item.

Page 9. Guard Ring MM 10009916
The contents of this drawing qualify it as a proprietary item.

Attachment 1, Part E, Source Mounting

Section 1 - 03-ACAMS-SF/AF

Page 1. Manifold Inlet
The contents of this drawing qualify it as a proprietary item.

Section 2 - OEM-FIS SENSOR ASSEMBLY

Page 1. Tube Manifold and Heated Inlet MM 10009902
The contents of this drawing qualify it as a proprietary item.

Please note all other drawings submitted with the application will be released to the Commissions Public Document Room as indicated in the cover letter.

I Mary J. McEnley, being duly affirmed, do depose and say as follows:

I am submitting this document to confirm NRC staff findings and in furtherance of the Company's application to withhold from public only the drawings listed in Enclosure 2.
If the basis for withholding these drawings or information from public inspection should change in the future that the information could then be made available for public inspection, I undertake to notify NRC promptly.