UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

March 18, 2002

Docket No. 04006940 License No. SMB-920

Martin O'Neill
Director, Safety, Health and Environmental Affairs
Cabot Performance Materials
County Line Road
Boyertown, PA 19512-1608

SUBJECT: INSPECTION 04006940/2001001, CABOT PERFORMANCE MATERIALS

Dear Mr. O'Neill:

This letter refers to your December 20, 2001 correspondence, in response to our October 23, 2001 letter. Thank you for informing us of the corrective and preventive actions documented in your letter. However, your letter has been reviewed and additional information is still needed. Please submit to this office within seven (7) days of receipt of this letter a written statement containing the requested information.

In your letter, you state that:

> "...the current practice of using general area air samplers to determine if airborne radionuclide concentrations in Building 73 approach regulatory limits was established after CPM hired an independent consultant to review monitoring programs in response to a CAL from the NRC dated February 9, 1995. The evaluation of our Occupational Air Sampling and Bioassay programs concluded not only was no one a Cabot exposed in 1994, but also no one probably exceeded the 10% threshold for exposure tracking and reporting. Also, Cabot performed bioassay measurements using whole body counting to assess any internal deposition. The results of the counting indicated no deposition above the minimum detectable activity of 1.0 nCi for the system.
>
> "We thought that any technical concerns regarding our programs were adequately covered by the previous evaluation and in recent years we have bases some minor adjustments to our programs on its conclusions."

To clarify the violation as discussed in our October 23, 2001 letter, our concern was that adequate surveys including the results of lapel air sampling were not performed to assure compliance with 10 CFR 20.1201. Rather than using lapel air sampling, the licensee measured airborne concentration levels at a single general area air sampler located on the first floor of Building 73.

In our February 9, 1995 CAL to which you referred, we stated that the licensee 1) should perform appropriate bioassays of workers who may have received intakes of thorium or uranium greater than ten percent of the annua l limits of intake (ALI) and 2) perform appropriate and representative sampling of the workers' breathing zone and assess thorium and uranium intake for all individual worker involved in ore processing. After numerous exchanges of

correspondence, meetings and conferences between Cabot and the NRC, whole body counting was performed on workers in June 1995 in compliance with item 1 of the February 9, 1995 CAL. At the time, Cabot hired Applied Radiological Control, Inc. (ARC) to evaluate the licensee's occupational air sampling program. In its report dated August 2, 1995, ARC made a number of recommendations regarding the occupational air sampling program including a recommendation that "general air samplers should be augmented by using lapel air samplers for relatively high exposure tasks." In its September 22, 1995 response to a Notice of Violation dated August 9, 1995, Cabot stated that they "will implement the recommendations in the ARC Report regarding the occupational air monitoring program."

Pursuant to the February 9, 1995 CAL, Cabot was required to submit quarterly status reports. In one such report dated April 29, 1996, Cabot reported that implementation of the updated air sampling program officially commenced in the current calendar quarter of 1996 and will utilize both grab and lapel air sampling equipment. Specifically, "Lapel air samplers will be used to ascertain breathing zone air samples to estimate workers' exposures on a job specific basis." These commitments were incorporated into the license during the 1996 renewal process, e.g. in letters dated April 10, 1996 and November 26, 1996.

During a December 1998 inspection of Cabot, we noted that the licensee monitors worker internal exposures through a combination of lung counting and lapel air sampling. Our inspection report states that "The licensee uses lapel air sampling as a primary means of determining worker doses. During a representative sample of each of its operations, the licensee places a lapel air sampler on a worker. The worker wears a respirator during the operation, and the sampler draws air that is near the intake for the respirator. In order to get adequate sensitivity, the licensee sets the lapel air samplers to pull air at twice standard man breathing rates. Using an air flow rate that is different than the breathing rate is acceptable in this case, since the samplers are not drawing the actual air that is breathed. In evaluating worker doses, the licensee uses the results of the lapel air sampling as the concentration outside the respirator and modifies the concentration by the protection factor of the respirator. The licensee uses lung counting as a means of ensuring that there have been no gross errors in the dose evaluations."

During our August 2001 inspection, we found that Cabot was no longer using lapel air sampling to evaluate worker exposure. Instead, Cabot was relying on lung counting and general area air sampling which we believe is not representative of concentrations that workers would be exposed to. We continue to believe that this was in violation of regulatory requirements and the conditions of your license.

In your December 20, 2001 letter, you propose submitting, by April 30, 2002, a technical report evaluating the conditions in your plant, including direct comparison between lapel and general area air sample results and an evaluation to determine if bioassay sampling is required to meet regulatory requirements. We will certainly further evaluate any proposal changing your survey program, but within seven (7) days of receipt of this letter please confirm that in the interim, you will follow the survey protocol previously approved, until such time as your license is amended to incorporate any approved changes.

Your cooperation with us is appreciated.

Sincerely,

Original signed by John D. Kinneman

John D. Kinneman, Chief
Nuclear Materials Safety Branch 2
Division of Nuclear Materials Safety

cc:
Timothy Knapp, Radiation Safety Officer
Commonwealth of Pennsylvania

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