



E.I. DU PONT DE NEMOURS & CO. (INC.)  
MEDICAL PRODUCTS DEPARTMENT

June 26, 1990

United States Nuclear Regulatory Commission  
Region I  
Attn: John D. Kinneman, Chief  
Nuclear Materials Safety Section B  
Division of Radiation Safety and Safeguards  
475 Allendale Road  
King of Prussia, PA 19406

Re: License No. 20-00320-21  
Docket No. 030-28902

Gentlemen:

This is written in response to the Notice of Violation issued on May 30, 1990 as a result of the Special Inspection No. 030-28902/89-001.

We concur with the findings of the inspection to the extent that the radiation monitoring instruments located in the Sources Production Laboratories, exclusive of the Ni-63 lab, at the time of the inspection were not of a design sensitive enough to detect Fe-55 and Cd-109 at the contamination action levels established by license conditions.

(1) Corrective Actions

Since the inspection, a detailed review of the instrumentation used in and around the Sources Production laboratories has been completed. In addition, detailed information has been provided to the Sources Production supervision on the contamination detection capability/limitations of different types of detectors, such as end-window GM, pancake GM, NaI, and gas flow proportional, for the radionuclides handled in the Sources Production areas.

Based on this information, the Sources Production operations have purchased, installed and had calibrated gas flow proportional counting equipment from Ludlum Instruments that is a more sophisticated counting system than observed during your inspection. This equipment consists of a Ludlum Model 2200 scaler ratemeter with a Ludlum Model 120 gas proportional detector and an accessory Ludlum Model 43-68 100 sq.cm. gas proportional detector.

This Ludlum system has been set up at the entrance to the Sources Production Laboratory H-104 and has been calibrated using NBS traceable standards of Ni-63 and Fe-55. The Sources Production personnel were trained on the use of this equipment during a formal training session conducted by the Billerica Radiation Safety Office on June 4, 1990. In addition, a procedure has been drafted by the Sources Production group detailing the operation and proper use of this equipment.

The Model 120 gas flow detector will be used to monitor the wipes routinely taken of the Sources Production areas by the production workers. This instrument will be used to monitor removable contamination samples from the areas that handle Fe-55.

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The 100 sq.cm. area detector has been installed with the Model 2200 scaler to be used for worker hand monitoring and can be used for laboratory surface area monitoring.

Additional contamination monitoring equipment will be stationed at a central location within the Sources Production areas. This equipment will include a NaI detector that can be used for the detection of Cd-109 contamination. Prior to the installation of this equipment, the Sources Production personnel have used in the past, and prior to the November inspection, and will continue to use as needed, the contamination monitoring instrumentation at one of the change areas, e.g. NaI and GM, and at other locations within the restricted area, e.g. LSC, NaI, GeLi (Analytical QC), gas flow proportional (Health Physics), in this section of Building 250.

The contamination monitoring using the above described procedure is in addition to the monitoring required at the entrance/exit of the Restricted Area and the surveillance conducted by the site Radiation Protection Office personnel in conformance to the requirements of our Materials License.

(2) Preventive Actions

The corrective steps that have been taken to avoid further violations include the training and information that has been received by the Sources Production personnel. In addition to the training and information described above, a formal training session was also conducted by the Radiation Protection Office for the Sources Production personnel on December 21, 1989 that included specific information on the proper use and limitations of radiation monitoring instruments for the radionuclides handled by the Sources Production operations.

These training sessions, the formal audits of the Sources Production operations by the Radiation Safety Office since the November inspection, and the NRC inspection itself have increased awareness of the need to ensure that proper radiological instrumentation is readily available to the production operations that may handle a wide variety of radionuclides.

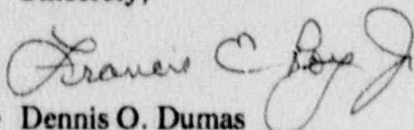
This increased awareness, coupled with the technical expertise of the Sources Production personnel in the manufacture of many different types of radiation emitting sources, will ensure that the deficiency noted in the November inspection will not repeat itself.

(3) Compliance

Information has been disseminated, equipment acquired and calibrated, and procedures modified where applicable. Prior to the date of this letter, full compliance with the regulatory requirements was achieved with the implementation of the above-described actions.

Please contact me if you require any additional information.

Sincerely,



*for* Dennis O. Dumas  
Radiation Safety Officer  
Greater Boston Area Site