



CANBERRA

July 16, 2013

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US Nuclear Regulatory Commission  
ATTN: Lymari Sepulveda  
Licensing Branch  
Div. of Materials Safety and State agreement  
Office of Federal & State Materials & Environmental Management Programs  
Washington DC 20555

SUBJECT: USNRC request for additional information

REFERENCE: Docket No. 030-36154  
Control No. 579625  
License No. 06-15099-03E

Dear Ms. Sepulveda:

It has come to CANBERRA's attention that the NRC is concerned about possible exposure to personal using and/or manufacturing CANBERRA check source assemblies containing the following sources:

- 9  $\mu\text{Ci}$  of Cs-137 (sealed check source capsule 218392-2 and manufactured by Eckert & Ziegler and North American Scientific in the past)
- 0.1  $\mu\text{Ci}$  of Sr-90 (sealed check source capsule 247158 and manufactured by Eckert & Ziegler and North American Scientific in the past)
- 10  $\mu\text{Ci}$  of Ba-133 (sealed check source capsule 218392-0 and manufactured currently by Eckert & Ziegler and from North American Scientific in the past)
- 1  $\mu\text{Ci}$  of Ba-133 (sealed check source capsule 218392-1 and manufactured currently by Eckert & Ziegler and North American Scientific in the past)

These sources are of nominal strength and are contained in safe, secure, and tamper free metal enclosures. They are used in the MX-9B(V19), MX-9B(V21) and MX-9B(V22) check source assemblies and are used to provide operation checks of a radiation detector and its associated electronics.

The possible radiological effects from this sources to personal manufacturing the MX-9B assembles is negligible, since the sources are stored in shielded contained (provided by the manufacturer) and locked in metal locker until they ready to be placed inside the check source assemblies. Once inside the check source assembly the enclosure is sealed up tightly.

Once inside the enclosure the check sources can only be activated by applying 20 VAC power to a connector that energizes the solenoid in the check source assemblies. The solenoid moves the lever arm and the source capsule in front of the collimating hole of the sampler (see attached outline drawings). When the MX-9B check source assembly is de-energized, the sampler shields the detector from the source capsule.

The MX-9B check sources assemblies are usually supplied as an integral part of other system component assemblies and are designed to be maintenance free, with only one moving part that requires no lubrication.

The MX-9BV19 check source assembly contains a 9  $\mu\text{Ci}$  Cs-137 source and is used to provide an operation check of gamma scintillation detection systems. The MX-9BV21 check source assembly contains a 0.1  $\mu\text{Ci}$  Sr-90 at the end of a rod assembly and is used to provide an operation check of beta scintillation detection systems. The MX-9BV22 check source assembly contains a 10  $\mu\text{Ci}$  Ba-133 and is used to provide an operational check of gamma scintillation detection systems.

In summation, the sources in question pose little risk to personal exposure, not only because of their nominal strength but also because they are always in a shield enclosure of some sort. The shield sampler that contains the sealed source capsule is part of the MX-9B and the MX-9B is part of bigger system. The MX-9B is usually bolted or welded to the system structure and thus the risk of it falling, breaking, and being tampered with is minimal at best.

We hope this helps alleviate some of your concerns, however we will be more than happy to provide with you more information such as drawings, pictures, and/or manuals should you require.

Sincerely,

Freeda Ahmed

Sincerely,

Ronald Como

