SCANTECHNOLOGIES
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REC'D MAR 21 1997

March 20, 1997

Radioactive Materials Program
Attn: Eric T. Jameson
4244 International Parkway Suite 114
Atlanta, GA 30354

Dear Eric:

Thank you for the letter of March 11, 1997 requesting more information on the SS&D evaluation submitted for the Coalscan 2600. I will answer your questions in the order you asked.

1. In Section 1.6, Radioactive Source Model Designation, the Cs-137 source listed as A3015 has the registration model number HEG-137. The registration number is CA406S122S, issued by the State of California on October 29, 1993. The A3015 refers to the capsule drawing number. A copy of the registration certificate for this sealed source is attached.

2. The engineering drawings referred to in Section 3.2, Details of Construction, were submitted with the original application. These drawings are all of the drawings used to manufacture the shutter mechanism and shielding.

3. The source containment in the Coalscan 2600 is the same design as used in both the 9200 and 9500 devices. As you know, Scan Technologies has an amendment request submitted for the 9500 device. The 9200/9500 design discussed here is the original design prior to the amendment request.

   The temperature range of -18^0C to 46^0C is not very extreme for this type of device. No testing was done in an environmental chamber, etc. Alternatively, actual devices using this shutter mechanism are currently in use in Australia under these temperature conditions, and have been for several years, with no failures reported.

4. The shutter mechanism is entirely manual, with no electrical or mechanical connections or indications located remotely, including the remote operators console. The shutter status will be known at the remote operator station due to failure of the measurement when the shutter is closed. However, this should be considered "useful information" and should not constitute an official indication of shutter position. The only accurate determination is by the mechanical handle/indicator on the device itself. A close-up photo of this handle/indicator is shown in Figure 1 below. This photo shows the handle that opens and closes the shutter and also serves as the shutter status indicator. When in the off position, a padlock can be inserted to lock the shutter in the off position.

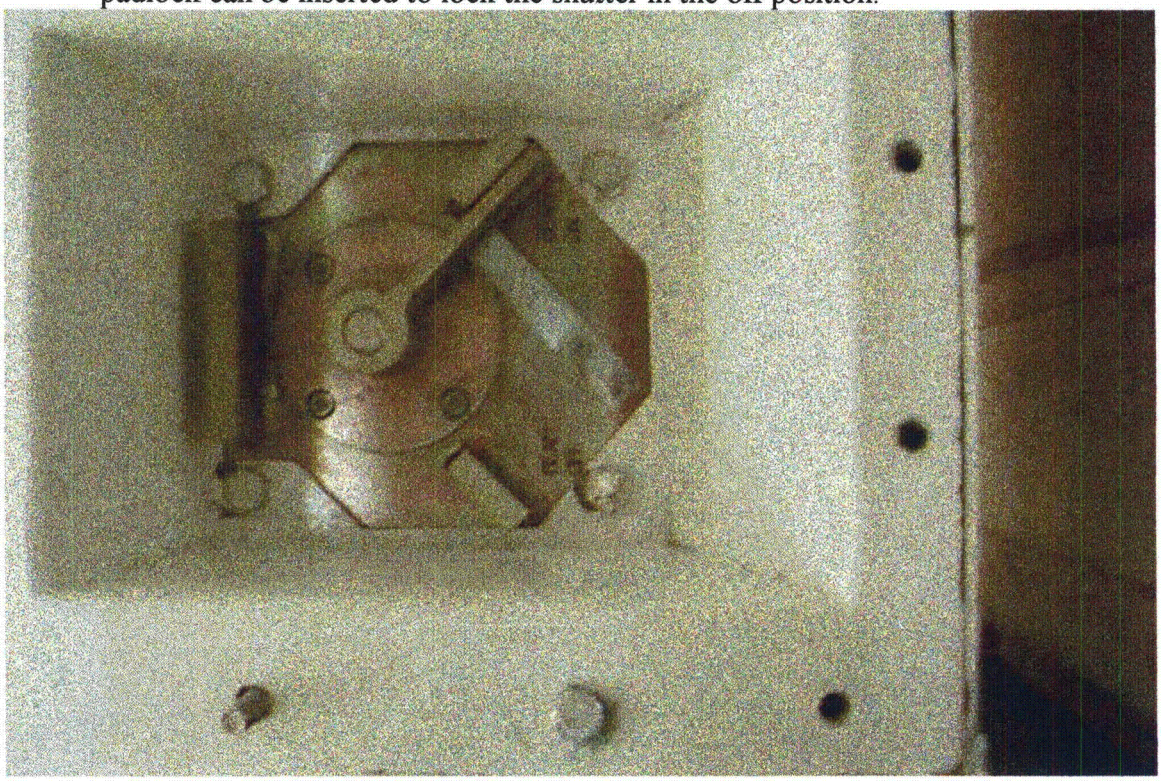

Figure 1. Close-up of shutter lever and indicator

5. The expected working life of the Coalscan 2600 device is highly variable, depending on the conditions of use. The durable construction should enable the device to last a minimum of ten (10) years in the absolutely harshest environment. However, if proper maintenance is performed and reasonable environmental conditions exist, there should be no maximum expected working life. Most likely, the device will be replaced by a newer model due to technological advancements and not due to aging of the device itself.

6. The copy of the label provided in Section 3.3 is actual size.

7. The radiation profiles in Section 3.6 were measured on December 3, 1996. The highest readings were measured on the horizontal plane surrounding the lower portion of the C-frame containing the shutter mechanism. It should be noted that

the actual readings measured were multiplied by 1.10 to develop the readings reported, as a conservative safety margin. It is often difficult to obtain duplicate readings from different survey instruments under the same conditions, and especially so for low levels of ionizing radiation. The safety margin was added to help insure that the reported radiation profiles would not likely be exceeded when measured by another instrument.

8. The radiation levels surrounding the device are the same for the BEAM ON and BEAM OFF positions, excluding the beam of ionizing radiation itself. The radiation levels measured result from ionizing radiation penetrating the shielding and outer gauge housing, not from scattering, etc. The beam of ionizing radiation is highly collimated, resulting in very little stray radiation.

9. When performing the BEAM ON / BEAM OFF test, the survey meter will be held near the actual beam of ionizing radiation. This is the only way this test can be performed with satisfactory results. With such low radiation levels present in the beam and the short interval of the actual measurements, this is a safe method and does not constitute a health risk to personnel performing the test.

10. The standard Operators Manual for the Coalscan 2600 does contain references to the radiation sources and shutter mechanism from a safety standpoint. However, nothing in the Operators Manual contradicts the information presented in the 'Radiological and Legal Requirements Supplement'. The test procedures for performing the ON/OFF mechanism test is provided to all customers, regardless of who will be performing the test.

If you have any other questions, please don't hesitate to contact me.

Sincerely,

Robin Ramsey
for
Jack Ramsey

Jack Ramsey,

Radiation Safety Officer

Enclosures: One