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Thermo Fisher Scientific would like to submit the following comments in response to NRC-2008-0419 Request for Comments on the Security and Continued Use of Cesium-137 Chloride Sources

Response #1 – Thermo Fisher Scientifics' use of CsCl

Thermo Fisher Scientific uses CsCl to calibrate the equipment that we produce. We also provide calibration services to customers worldwide including various government agencies. While we also possess CsCl in calibrators and irradiators, calibration is our primary use of this material. Additionally, all of our sources are in sealed form. We have no powders or mixed waste forms of CsCl.

CsCl has been used to calibrate ours, and similar instrumentation, for over 40 years, for several reasons:

1. The half life is 30 years; shorter half life sources aren't feasible since one has to constantly recalibrate their standard to maintain the accuracy of the calibrations being performed.
2. The energy of the source expressed in KeV or MeV (electron volts) is critical to the calibration of gamma dose rate instrumentation. Cs-137 at 662 keV or 0.662 MeV is pretty well in the middle of the energy spectrum for gamma dose rate.

We utilize the three point calibration curve method which provides a great deal of accuracy and dependability. Our calibration program is N.I.S.T. traceable and to the best of our knowledge is the standard calibration method in our industry. We have been providing these services to D.O.E., N.R.C., D.H.S. and others worldwide. Our company has been highly regarded as the world leader in providing these products and services.

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Add = J. Jankovich (JPS2)

## Response #2 – Use of Alternative Material

If Thermo Fisher Scientific were required to turn over possession of our source material, we would currently have no other alternative radioisotopes to perform our calibration services. As previously mentioned, we provide these calibration services to many government agencies. In addition, our calibration protocol and N.I.S.T. traceable standards often become written in our customer's Standard Operative Procedures (S.O.P.) and Quality Programs. Changes to our procedures would result in changes to our customer's procedures. This would ultimately result in our inability to provide accepted calibration services for our customers.

The cost impact will likely be felt beyond our revenue stream. Our customers would have to re-evaluate the equipment they are using and re-write their S.O.P.s. This would take a significant effort on their part and in many cases, would simply not be allowed. For example, the NRC itself imposes strict regulation on the use of calibrated equipment in its controlled facilities. Since we provide equipment to these facilities, we must continue to maintain our calibration program as is. Any changes that we make would have to be approved by these NRC controlled facilities. Without approval, we would no longer be allowed to provide these services. Because of the effort involved and the possible likelihood that alternative methods could not be effectively and efficiently established, I feel exception on further restrictions involving the use of CsCl would have to be granted.

## Response #3 – Handling and Storage of CsCl

Thermo Fisher Scientific has used CsCl without incident for over forty years, and continues to re-evaluate its safety policies to ensure that no occupational and public exposures occur. Additionally, technology has made it possible for the implementation of more efficient security measures. Examples of these are the use of cameras, electronically controlled gate and building access. As additional security and safety measures are required, Thermo Fisher Scientific will be prepared to do whatever is necessary to ensure safe handling and storage of material it possesses.

#### Response #4 – Current Impact of Source Removal and Disposal

Thermo Fisher Scientific has experience with disposal of sealed Cs sources. The concern is not the safe removal because we have clearly demonstrated our ability to perform source recovery operations. Safety is always a concern but in this case, our primary concern is where to send the material. If the D.O.E. through the Off-Site Source Recovery Project (OSRP) would agree to take possession of the country's Cs, the issue of costs to recover and transport can be addressed. Until NRC, DOE and other regulating authorities can provide our industry a path for disposal, we have no current option but to store our materials indefinitely. If the goal is to outright ban the use of this material, we would be excluded from utilizing the material for other uses, ex. manufacturing of check sources. This would mean that the only path for Cs is disposal and this is simply not a practical solution to take at this time without our government's assistance.

Sincerely,

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