U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No.	030-10767
License No.	034-016305-01
Inspection Report No.	030-10767/96001
Licensee:	Perfection Services, Inc.
Location:	110 Marietta Street Stone Creek, Ohio
Dates of Inspection:	July 31, August 19-23, August 26-28, and September 25-26, 1996
Inspectors:	W. J. Slawinski, Senior Radiation Specialist P. J. Lee, Ph.D, Radiation Specialist D. W. Nelson, Radiation Specialist G. O. Parker, Radiation Specialist J. R. Mullauer, Radiation Specialist
Approved By:	J. W. McCormick-Barger, Chief Decommissioning Branch

EXECUTIVE SUMMARY

Perfection Services, Inc.
NRC Inspection Report No. 030-10767/96001(DNMS)

Perfection Services, Inc., based at a premises in Stone Creek, Ohio, was licensed by the NRC in 1975 for the possession and use of sealed sources incident to well logging activities. Licensed operations ceased and the licensee declared bankruptcy in February 1996. The buildings at the Stone Creek, Ohio, premises were subsequently locked and nineteen NRC-licensed sealed sources and other equipment were left within the building. Keys to the building were controlled by a court appointed bankruptcy trustee.

The bankruptcy court entered a court order authorizing the sale of the sources to another NRC licensed well logger, and provided that the remaining equipment in the building would be deemed abandoned after the sale was completed. In July 1996, the sealed sources were inventoried and leak tested in preparation for their sale and transfer to the NRC-licensed well logger. These activities revealed two sources, a nominal two curie cesium-137 sealed source and a three curie americium-241 sealed source, that were leaking radioactive material in excess of NRC limits. Previous leak tests of these sources had not indicated that they were leaking.

In view of the filing of the bankruptcy petition and the terms of the court order, the radiological concerns precipitated by the discovery of the leaking sources in July prompted the NRC's direct involvement to ensure the continued security of the radioactive material within the building and the health and safety of the public. Beginning in late July 1996, NRC inspectors conducted health and safety surveys at the facility that consisted of limited direct surveys and smears for removable contamination. All smears were collected for NRC laboratory analysis to determine the extent of residual cesium-137 and americium-241 contamination from formerly licensed activities at the facility. Smear analyses revealed residual levels of cesium-137 within the building that exceeded the unrestricted release guidelines in the NRC's *"Guidelines for Decontamination of Facilities and Equipment prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material"* (Attachment 1). The contamination was found on the surfaces of a workbench, table, and on isolated areas of the floor beneath the workbench. One area on the surface of the workbench also indicated the presence of trace amounts of americium-241. Areas exhibiting removable contamination were subsequently decontaminated by the building owner to levels below the guidelines. No other areas with radioactivity in excess of the NRC's unrestricted use guidelines were identified.

The court order was amended in August 1996 to provide that no personal property could be removed from the building unless the NRC first provided written notification that the NRC had not identified any significant health or safety hazards at the premise that would prevent the removal of the remaining personal property or the use of the premises.

In August and September 1996, the nineteen sealed sources previously possessed by Perfection Services were removed from the premises and transferred to authorized recipients. The leaking americium-241 source (Serial No. 71-1-557B) was transferred to the Department of Energy (DOE) for storage at Los Alamos National Lab and the leaking cesium-137 source (Serial No. A-861) was transferred to a contractor for disposal at the Barnwell, South Carolina, Radioactive Waste Burial Site. The seventeen non-leaking sources were transferred to Best Wireline, Inc., an NRC licensee. All of the sources arrived at their proper destinations without incident.

DETAILS

1. Background

Perfection Services, Inc. was licensed by the NRC for the possession and use of sealed sources at 110 Marietta Street, Stone Creek, Ohio, since 1975 under NRC License No. 34-16305-01. All operations ceased at the building on February 11, 1996, and the licensee declared bankruptcy on February 14, 1996. After operations ceased on February 11, 1996, the building was locked, leaving nineteen radioactive sources, eight vehicles and numerous pieces of equipment on the premises. Eighteen of the nineteen sources were stored in an in-floor pit and one source was stored aboard a logging truck parked in the building. Keys to both the building and its storage pit were controlled by a bankruptcy trustee.

Best Wireline, Inc., a newly NRC-licensed well logger, planned to purchase the nineteen sources in the Perfection Services inventory. An order of the bankruptcy court, issued in mid-July 1996, provided that the equipment remaining in the building would be deemed abandoned after the sale to Best Wireline was completed, allowing for removal of the remaining equipment from the building after the sale without any further restriction. In July 1996, the sources were inventoried and leak tested by the consultant for Best Wireline in preparation for the sale. However, these activities revealed one potential missing source and two that were leaking radioactive material in excess of the NRC 0.005 microcurie limit. These problems prompted direct NRC involvement including health physics support from NRC Region III and assistance from the Office of Nuclear Material Safety and Safeguards (NMSS) and the Office of General Council (OGC). The potentially missing source was subsequently found in a well logging truck located on the premises.

On August 20, 1996, a revised court order was issued specifying that the trustee was to undertake steps necessary to ensure the proper removal and disposal of the leaking sources, with the assistance of the NRC. The trustee was also to undertake steps to ensure the removal and cleanup of related items. Most importantly, the court order provided that the abandonment of personal property remaining on the premises after the sale to Best Wireline would not be effective until the NRC, after conducting such tests and surveys as it deems necessary, notified the trustee, in writing, that the NRC had not identified significant health or safety hazards at the premises that would prevent the removal of the remaining personal property or the use of the premises. The revised order also states that the issuance of the written notice would not constitute a guarantee to any of the parties with respect to the acceptability of the remaining personal property or the premises for unrestricted use or any environmental matters, and does not foreclose the NRC from making recommendations to the parties regarding further actions related to the remaining personal property or the premises.

On July 31, 1996, NRC Region III inspectors arrived at Perfection Services, Inc. to verify the security of the licensed material, to determine if the facility presented a hazard to the public health and safety, and to assist with the preparations for the e' ntual removal of the 19 sources stored at the facility. NRC Region III inspectors visited the site the weeks of July 29, August 19, August 26, and September 23, 1996.

2. Summary of Independent Measurements

Inspectors conducted independent measurements consisting of direct radiation surveys and smears for removable contamination in selected areas in and around the facility. Inspectors also provided radiological assistance and support for the transfer of the seventeen non-leaking sources to Best Wireline, packaging and shipment of a leaking americium-241 source to DOE's Los Alamos National Laboratory, and transfer of a leaking cesium-137 source and miscellaneous solid radioactive waste to a contractor hired by the trustee, for its subsequent burial at the Barnwell disposal site.

Inspectors conducted direct surveys on accessible floor surfaces throughout the building and on walls to a height of two meters. Direct surveys were also made on numerous pieces of equipment stored in the facility that were used in well logging operations, focusing on equipment that may have been in contact with the two leaking sources. Additionally, direct surveys were performed of logging vehicles located both within and outside the building, on selected objects found outside the building, and on the property immediately surrounding the building. Smears were taken on objects and equipment located throughout the facility and on floor, table, and workbench surfaces where radiation was detected by direct survey. All smears were analyzed for both beta and alpha contamination in the NRC Region III laboratory using a Gamma Products Model G-5000 gas flow proportional counter and the results reported in disintegrations per minute per smear (dpm/smear). Analysis times were of sufficient duration to achieve minimum detectable activities of 6 disintegrations per minute (dpm) alpha and 11 dpm beta per smear.

Floor, table, and/or workbenches exhibiting detectable radiation were divided into one square foot grids and further surveyed by direct measurement and for the presence of removable contamination. Approximately 700 smears were collected and analyzed by the NRC during the project.

The instruments selected to conduct direct surveys are identified in Table 1 (Attachment 2 (manufacturer, model and serial number)). Pancake GM detectors coupled to Ludlum Model 3 ratemeters and Pancake GM detectors coupled to Ludlum Model 2241-2 ratemeters/scalers were used to conduct direct beta and gamma surveys on surfaces, floors, walls, and equipment. Ludlum Model 19 MicroR meters were used to measure gamma dose rates one meter from floor and wall surfaces. Sodium-iodide (NaI) detectors coupled to Ludlum Model 2241-2 ratemeter scalers were used to

scan ground, floor, and wall surfaces for the presence of gamma emitters. A RemBall coupled to a Ludlum Model 2241-2 scaler was used to measure neutron dose rates on the container used to ship the leaking americium-beryllium (AmBe) source. Zinc-sulfide (ZnS) detectors coupled to Ludlum Model 2241-2 scalers/ratemeters were used to scan surfaces for alpha contamination and to quantify alpha activity on swipes.

3. Inspector Activities and Results

a. July 31 and August 1, 1996

Three inspectors visited the facility on July 31, 1996, and made direct survey measurements outside the building along its perimeter and collected smears of selected items found outside on the property. Direct survey measurements showed that radiation levels in unrestricted areas satisfied 10 CFR 20.1301 requirements that the dose in any unrestricted area from external sources did not exceed 2 millirem in any one hour. Smear surveys revealed no removable contamination outside the facility.

The inspectors collected smear surveys on floor surfaces surrounding the in-floor storage pit within the building and on the pit cover plate. These smears showed no removable contamination above the NRC's unrestricted release guidelines. The NRC's release guideline for beta-gamma emitters for building surfaces is 5000 disintegrations per minute (dpm) per 100 square centimeters (cm^2) averaged over an area not to exceed one square meter; 15,000 dpm/100 cm^2 maximum activity over an area not to exceed 100 cm^2; and 1000 dpm/100 cm^2 removable activity. The release guideline for alpha radiation from the AmBe source for building surfaces is 100 disintegrations per minute (dpm) per 100 square centimeters (cm^2) averaged over an area not to exceed one square meter; 300 dpm/100 cm^2 maximum activity over an area not to exceed 100 cm^2; and 20 dpm/100 cm^2 removable activity. These guidelines are found in "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material", dated August 1987 (Guidelines).

Eighteen of the nineteen sources listed on the Perfection Services inventory record (Attachment 3 [Table 2]) were found within their respective transport containers and secured in the facility's storage pit. An americium-241 source which could not be located by Best Wireline's consultant earlier in July 1996, was found by the inspectors stored aboard one of the well logging trucks parked inside the facility. Smear surveys on each of the nineteen transport containers housing the sources revealed no detectable contamination. All transport containers and sources were returned by the inspectors to the storage pit or truck and secured prior to leaving the facility.

Direct radiation measurements made by the inspectors throughout the facility identified isolated low levels of contamination on a workbench, vice, and table where source leak tests were performed earlier in July by Best Wireline's consultant, and on floor surfaces below the

workbench. Smear surveys of areas where contamination was detected through direct measurement disclosed one small area with removable contamination in excess of the NRC guideline. Specifically, an isolated area of the workbench exhibited removable beta and alpha contamination of 2566 dpm/100cm2 and 33 dpm/100cm2, respectively. These levels were approximately twice the removable contamination limit in the guideline. Access to these contaminated areas was restricted by the inspectors on July 31, 1996, by establishing posted rope and tape barriers.

On August 1, 1996, the inspectors surveyed the tools and personal articles used by Best Wireline's consultant during leak test activities in July 1996. No contamination was detected by direct measurement or smear survey.

b. August 15-16, 1996

An NRC inspector visited the Perfection Services facility on August 15, 1996, to (1) review historical utilization records for the two sources found to be leaking in July 1996 to determine whether the leaking sources may have been used in the field, and (2) to perform surveys on available and accessible well logging tools and assorted equipment.

Available records reviewed showed that with the following exceptions neither source had been used in the field during the 1990s and remained in storage within the facility's storage pit. On nine occasions between October 1, 1990, and November 25, 1990, the americium-241 source was transported to well logging sites. The records, however, do not indicate which sources were actually used down hole since several sources were usually brought to a logging site as backups. Also, licensee records show that the two sources found to be leaking in July 1996, were last leak tested by the licensee in May 1995, and the samples were analyzed by Microtech Services, a State of Texas licensee. Both samples were found to have had less than .0001 microcuries of contamination present.

The inspector performed direct radiation measurements on well logging tools and assorted equipment that were located throughout the Perfection Services facility. No radioactivity above background was detected.

On August 16, 1996, the inspector traveled to one of the well logging sites where the americium-241 source was either used or maintained on the logging truck as a backup in the 1990s and performed direct radiation measurements. No radioactivity above background was detected.

c. August 20-23, 1996

Two inspectors visited the facility for four days the week of August 19, 1996, to assist in the transfer of the non-leaking sources, prepare for the transfer of the leaking americium-241 source to DOE, and further characterize the radiological condition of the facility. The inspectors also leak tested the americium-241 source found aboard the logging vehicle the previous visit. This source was not located and

consequently had not been leak tested by Best Wireline's consultant in July 1996.

The inspectors removed the transport containers housing sources from the pit and staged them in the building within a contamination free controlled area established by the inspectors. Neutron and gamma dose rate measurements were made and each transport container was re-smeared in preparation for the transfer to Best Wireline, Inc. No removable contamination was identified on the transport containers. Results of direct radiation measurements on each transport container demonstrated that Department of Transportation (DOT) radiation level criteria for Yellow III labeled packages were met. Seventeen non-leaking sealed sources were transferred to Best Wireline without incident on August 22, 1996.

The serial number of the leaking americium-241 source was physically verified by the inspectors with the assistance of Best Wireline's consultant. Also, the source holder (i.e. bullplug) containing the leaking source was smeared for removable contamination in preparation for its pending transfer to DOE.

Workbench, table, and floor surfaces found to be contaminated during the inspectors' previous visit to the facility were divided into one foot square grids and further characterized by both direct and smear survey. Smears collected within six grided regions on the workbench exhibited removable beta contamination above the NRC's guidelines; ranging up to 4850 dpm/100cm2. One workbench grid region also showed removable alpha contamination of 36 dpm/100cm2. A floor grid area displayed removable beta contamination in excess of the guidelines at 1211 dpm/100cm2. No other regions within the grid displayed contamination above the guidelines.

d. August 26-28, 1996

One inspector visited the facility the week of August 26, 1996, to assist DOE Los Alamos National Laboratory (LANL) representatives in the packaging and shipment of the leaking americium-241 source (Serial No. 71-1-557B). The source was packaged in a DOT Specification 2R container and 30-gallon overpack on August 27, 1996, and shipped to LANL on August 28, 1996. NRC staff was notified by LANL that the source arrived at LANL on September 4, 1996, without incident.

On August 27 and 28, 1996, the building owner remediated those floor, workbench, and table areas found contaminated above NRC guidelines during previous site visits. Decontamination activities were supervised by the NRC inspector.

All waste resulting from remediation and that generated during previous visits to the facility was surveyed by the inspector for both alpha and beta contamination. Less than one cubic foot of solid radwaste consisting of paper and plastic was identified. The radwaste was collected and segregated into zip lock bags and stored in the building

for subsequent disposal, along with the leaking cesium-137 source that remained at the facility.

Post remediation surveys of previously contaminated floor and workbench surfaces revealed no direct or removable contamination above NRC guidelines. Approximately 100 post remediation smears were collected in the gridded regions.

e. September 25-26, 1996

On September 26, 1996, an NRC inspector observed, Bionomics, a waste broker, remove the remaining leaking cesium-137 source (Serial No. A-861) from the storage pit. The broker packaged the radwaste, bullplug and source in a 55 gallon shipping container, conducted surveys of the package, prepared the required shipping documents, loaded the shipping container on a transport vehicle, and shipped the package to the Barnwell, South Carolina radioactive waste burial site. The inspector also observed the packaging of the source and reviewed the shipping documents and waste manifest. No problems or deficiencies were noted.

After the waste and source were removed from the site, inspectors performed direct surveys of the source storage container, and floor and walls of the storage pit, the accessible floor areas of the building and accessible areas of the walls up to a height of 2 meters. The inspectors also took dose rate measurements at a distance of one meter from the center of each meter squared surface of the floor surface. In addition to the direct surveys, a total of 40 swipes were collected on the source storage container, floor, walls and lid of the storage pit.

The direct surveys of the source storage container, floors, the walls, and the pit revealed no areas where the residual level of contamination exceeded two times the background count rate of 50+/-10 counts per minute. All dose rate measurements at one meter from the floor revealed no areas where the dose rates exceeded the background dose rate of 7+/-5 microroentgens per hour.

Laboratory analysis of the swipes collected on the source storage container, floor, walls, and lid of the pit revealed no removable contamination above NRC guidelines.

4. Exit Meeting

At the conclusion of the onsite inspection on September 26, 1996, the preliminary results of the inspection were discussed with Mr. Arthur Medford.

Persons Contacted

Arthur Medford, Property Owner, Perfection Services, Inc.
Anne Silagy, Trustee
Roger Butler, President & Radiation Safety Officer, Best Wireline
Vance Hatler, Los Alamos National Laboratory

Andy Thompkins, Advanced Technologies & Labs (DOE LANL contractor)
John McCormick, Bionomics
Donald Platz, Former President & Radiation Safety Officer, Perfection Services, Inc.
* Sherry Jones, Los Alamos National Laboratory
* Lee Leonard, Advanced Technologies & Labs

* Denotes telephone contact only.

Attachments:
1) Release Guidelines
2) Table 1 - Survey Instruments
3) Table 2 - Source Inventory

Attachment 1

GUIDELINES FOR DECONTAMINATION OF FACILITIES AND EQUIPMENT PRIOR TO RELEASE FOR UNRESTRICTED USE OR TERMINATION OF LICENSES FOR BYPRODUCT, SOURCE, OR SPECIAL NUCLEAR MATERIAL

U.S. Nuclear Regulatory Commission
Division of Industrial and
Medical Nuclear Safety
Washington, DC 20555

August 1987

The instructions in this guide, in conjunction with Table 1, specify the radionuclides and radiation exposure rate limits which should be used in decontamination and survey of surfaces or premises and equipment prior to abandonment or release for unrestricted use. The limits in Table 1 do not apply to premises, equipment, or scrap containing induced radioactivity for which the radiological considerations pertinent to their use may be different. The release of such facilities or items from regulatory control is considered on a case-by-case basis.

1. The licensee shall make a reasonable effort to eliminate residual contamination.

2. Radioactivity on equipment or surfaces shall not be covered by paint, plating, or other covering material unless contamination levels, as determined by a survey and documented, are below the limits specified in Table 1 prior to the application of the covering. A reasonable effort must be made to minimize the contamination prior to use of any covering.

3. The radioactivity on the interior surfaces of pipes, drain lines, or ductwork shall be determined by making measurements at all traps, and other appropriate access points, provided that contamination at these locations is likely to be representative of contamination on the interior of the pipes, drain lines, or ductwork. Surfaces of premises, equipment, or scrap which are likely to be contaminated but are of such size, construction, or location as to make the surface inaccessible for purposes of measurement shall be presumed to be contaminated in excess of the limits.

4. Upon request, the Commission may authorize a licensee to relinquish possession or control of premises, equipment, or scrap having surfaces contaminated with materials in excess of the limits specified. This may include, but would not be limited to, special circumstances such as razing of buildings, transfer of premises to another organization continuing work with radioactive materials, or conversion of facilities to a long-term storage or standby status. Such requests must:

   a. Provide detailed, specific information describing the premises, equipment or scrap, radioactive contaminants, and the nature, extent, and degree of residual surface contamination.

   b. Provide a detailed health and safety analysis which reflects that the residual amounts of materials on surface areas, together with other considerations such as prospective use of the premises, equipment, or scrap, are unlikely to result in an unreasonable risk to the health and safety of the public.

5. Prior to release of premises for unrestricted use, the licensee shall make a comprehensive radiation survey which establishes that contamination is within the limits specified in Table 1. A copy of the survey report shall be filed with the Division of Industrial and Medical Nuclear Safety, U. S. Nuclear Regulatory Commission, Washington, DC 20555, and also the Administrator of the NRC Regional Office having jurisdiction. The report should be filed at least 30 days prior to the planned date of abandonment. The survey report shall:

   a. Identify the premises.

   b. Show that reasonable effort has been made to eliminate residual contamination.

   c. Describe the scope of the survey and general procedures followed.

   d. State the findings of the survey in units specified in the instruction.

   Following review of the report, the NRC will consider visiting the facilities to confirm the survey.

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ACCEPTABLE SURFACE CONTAMINATION LEVELS

NUCLIDES[a]	AVERAGE[b c f]	MAXIMUM[b d f]	REMOVABLE[b e f]
U-nat, U-235, U-238, and associated decay products	5,000 dpm α/100 cm^2	15,000 dpm α/100 cm^2	1,000 dpm α/100 cm^2
Transuranics, Ra-226, Ra-228, Th-230, Th-228, Pa-231, Ac-227, I-125, I-129	100 dpm/100 cm^2	300 dpm/100 cm^2	20 dpm/100 cm^2
Th-nat, Th-232, Sr-90, Ra-223, Ra-224, U-232, I-126, I-131, I-133	1000 dpm/100 cm^2	3000 dpm/100 cm^2	200 dpm/100 cm^2
Beta-gamma emitters (nuclides with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above.	5000 dpm $\beta\gamma$/100 cm^2	15,000 dpm $\beta\gamma$/100 cm^2	1000 dpm $\beta\gamma$/100 cm^2

[a] Where surface contamination by both alpha- and beta-gamma-emitting nuclides exists, the limits established for alpha- and beta-gamma-emitting nuclides should apply independently.

[b] As used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

[c] Measurements of average contaminant should not be averaged over more than 1 square meter. For objects of less surface area, the average should be derived for each such object.

[d] The maximum contamination level applies to an area of not more than 100 cm^2.

[e] The amount of removable radioactive material per 100 cm^2 of surface area should be determined by wiping that area with dry filter or soft absorbent paper, applying moderate pressure, and assessing the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. When removable contamination on objects of less surface area is determined, the pertinent levels should be reduced proportionally and the entire surface should be wiped.

The average and maximum rad .tion levels associated with surface contamination resulting from beta-gamma emitters should not exceed 0.2 mrad/hr at 1 cm and 1.0 mrad/hr at 1 cm, respectively, measured through not more than 7 milligrams per square centimeter of total absorber.

Attachment 2

TABLE 1

Survey Instruments

Instrument	Model No.	Serial No.	Detector	Last Calibration
Ludlum	2241-2	131397	Ludlum 44-10	07/23/96
			Ludlum 44-9	07/23/96
			Ludlum 43-5	07/23/96
			Ludlum 44-38	07/23/96
Ludlum	2241-2	130052	Ludlum 44-10	06/14/96
			Ludlum 44-9	06/14/96
			Ludlum 43-5	06/14/9[illegible]
Ludlum	3	109493	Ludlum 44-9	01/02/9[illegible]
Ludlum	3	109481	Ludlum 44-9	09/03/96
Ludlum	12	87997	Ludlum 42-4 (BF-3)	08/30/95*
Ludlum	19	21567	N/A	04/11/96

The meters and probes were serviced and calibrated on an annual basis. Calibrations were performed with National Bureau of Standards (NBS) traceable sources. Source checks were performed using a cesium check source, Serial Number S-2134, and an americium check source, Serial Number 3534. The average beta efficiency for the Ludlum count rate meters (Model 3) with the Model 44-9 probes was about 25 percent. The average efficiency for Ludlum 2241-2 with the 44-9 detector was about 20 percent. The gamma scintillation detectors (Ludlum 44-10) were checked for constancy only. Average background for the GM pancake probes (Ludlum 44-9) was 50+/-10 counts per minute (cpm). The Model 19 meters measured 7+/-5 microroentgens per hour background radiation.

*Only used during the August 26-28, 1996, inspection, so was still within the one year calibration period.

Attachment 3

TABLE 2

Source Inventory

Isotope	Nominal Activity (Curies)	MFG	Model No.	Serial No.	Comments
Cs-137	2 Ci	Gulf Nuclear (GN)	CSV	CSV-95	Storage Pit (SP)
Cs-137	2 Ci	GN	CSV	CSV-168	SP
Cs-137	2 Ci	Gamma Indust	unknown	CSV-898	SP
Cs-137	2 Ci	GN	CSV	CSV-B91	SP
Cs-137	2 Ci	GN	CSV	CSV-718	SP
Cs-137	2 Ci	GN	CSV	A-861	Leaker
Cs-137	125 mci	Gamma Indust	VD-HP	A-962	Stored in a pipe
Cs-137	25 uci	GN	VL	VL-1-837	SP
Cs-137	2 Ci	GN	CSV	CSV-J11	SP
Cs-137	2 Ci	GN	CSV	CSV-H87	SP
Am-241	3 Ci	GN	71-1	71-1-523G	SP
Am-241	3 CI	GN	71-1	71-1-522G	In truck
Am-241	3 Ci	GN	71-1	71-1-178	SP
Am-241	3 Ci	GN	71-1	71-1-144	SP
Am-241	3 Ci	GN	71-1	71-1-557B	Leaker
Am-241	3 Ci	GN	71-1	71-1-639B	SP
Am-241	50 mCi	GN	71-1	71-1-664B	SP
Am-241	5 Ci	GN	71-1	71-1-710B	SP
Am-241	5 Ci	GN	71-1	71-1-699B	SP