Hibbing Taconite Company

A JOINT VENTURE

Pickands Mather & Co., Managing Agent
P.O. Box 589
Hibbing, Minnesota 55746

April 25, 1985

Applicant: Mary III
Check No.: 28597
Amount/Fee Category: $120
Type of Fee: 3P/B Ren
Date Check Rec'd: 5/3/85
Received By: [illegible]

U. S. Nuclear Regulatory Commission
Region III
Material Licensing Section
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Dear Ladies and Gentlemen:

We would like to renew our Special Nuclear Materials License No. SNM-1558. Enclosed is a check in the amount of $120.00 to cover the renewal fee.

We would like to continue to operate under our current license. We will use and possess the licensed material in accordance with statements, representations and procedures contained in our letters dated April 3, 1980, October 11, 1982 and December 27, 1984, applicable NRC Regulations and license conditions.

If you have any questions in this regard, please contact Mr. R. C. Ives at (218) 262-5970.

Very truly yours,

John D. Jeffries

JDJ:db

Enclosure

c: R. C. Ives

RECEIVED
APR 29 1985
REGION III

8510040085 850909
REG3 LIC70
SNM-1558 PDR

APR 29 1985

CONTROL NO. 78816

The Agent is acting only for and on behalf of Hibbing Taconite Company, a Joint Venture consisting of Bethlehem Hibbing Corporation (50% interest), Hibbing Development Company, a Minnesota general partnership (33.3333% interest), Pickands Mather & Co. (10% interest) and Ontario Hibbing Company (6.6667% interest). The liability of Bethlehem Hibbing Corporation in respect of any obligation hereunder shall be limited to 50% thereof, the liability of Hibbing Development Company in respect of any obligation hereunder shall be limited to 33.3333% thereof, the liability of Pickands Mather & Co. in respect of any obligation hereunder shall be limited to 10% thereof, and the liability of Ontario Hibbing Company in respect of any obligation hereunder shall be limited to 6.6667% thereof.

0272.USN

Hibbing Taconite Company
A JOINT VENTURE
Pickands Mather & Co., Managing Agent
P.O. Box 589
Hibbing, Minnesota 55746

070-02003
SNM-1558
R
Ed 5/31/85

April 25, 1985

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Material Licensing Section
799 Roosevelt Road
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0272.USN

Hibbing Taconite Company
A JOINT VENTURE
Pickands Mather & Co., Managing Agent
P.O. Box 589
Hibbing, Minnesota 55746

Applicant
Check No. 27769
Annual Fee Category 7C
13 Amd
Date check rec'd 1/16/85
Received By CP

RECEIVED BY LFMB
Date 1/16/85
Log Jan 10
By CP
Orig. To RIII
Action Compl CP

December 27, 1984

'85 JAN 16 A10:12
U.S.N.R.C.
LIC FEE MGMT. BRANCH

U. S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Attention: Licensing Division

Dear Ladies and Gentlemen:

Enclosed is our application for the addition of a Texas Nuclear NOLA system to our Special Nuclear Materials License No. SNM-1558. Although the NOLA system is a custom device it has been previously evaluated and licensed many times by the U.S. Nuclear Regulatory Commission. Some of the licenses referenced are a) Reserve Mining Company, SNM-1562; b) Erie Mining Company, SNM-1178; c) Tilden Mining Company, SNM-1492; and d) U.S. Steel, 22-02973-01.

Enclosed as part of our application is 1) a technical data writeup, 2) two sets of NOLA system location drawings (3 drawings per set), 3) two sets of source capsule and source shield drawings (2 drawings per set) and 4) Special Form Certificates for both the Pu-238-Be and CS-137 sources.

In addition we would like to request that a change in principal officers be reflected as follows:

J. R. Barker, Chairman
One Landmark Square
Stamford, Connecticut 06901

Robert McInnes, President
1100 Superior Avenue
Cleveland, OH 44114

H. P. Whaley, Group Vice President
1100 Superior Avenue
Cleveland, OH 44114

RECEIVED DEC 31 1984
DEC 31 1984
REGION III

8504110660 850321
REG3 LIC70
SNM-1558 PDR

CONTROL NO. 78049

DPA2-12/27.DA-1

All other conditions of our license should remain the same. Enclosed you will find a check in the amount of $60.00 to cover the license amendment fee.

If you have any questions in this regard please contact Mr. K. F. Jopke at (218) 262-5901.

Very truly yours,

John D. Jeffries
General Manager

JDJ:db

c: R. C. Ives

CONTROL NO. 78049

DPA2-12/27.DA-2

Technical Data

This system will be used for elemental determinations in iron ore and is being supplied to Hibbing Taconite Company by Texas Nuclear Corporation 9101 Highway 183, Austin, Texas 78758. The system is shown on a drawing labeled "Schematic Representation of NOLA I". The slurry is cycled continuously through the irradiate cell and the detector for analysis.

The general layout of the NOLA System is shown on the drawing labeled "Nola I Silica Analyzer". The system will be installed in the Hibbing Taconite Company Concentrator Analytical Laboratory as shown on the enclosed drawings Plant Arrangement No. 2200-2A, Concentrating Plant General Arrangement No. 2504-4 and NOLA Installation No. 4-0481. This room has solid floors and walls and can easily b e secured against unauthorized entry. The environmental conditions at the installation site are regulated to provide a comfortable and safe atmosphere for company personnel and as such will be nondetrimental to the NOLA System.

The principal hazards of concern in this system are:

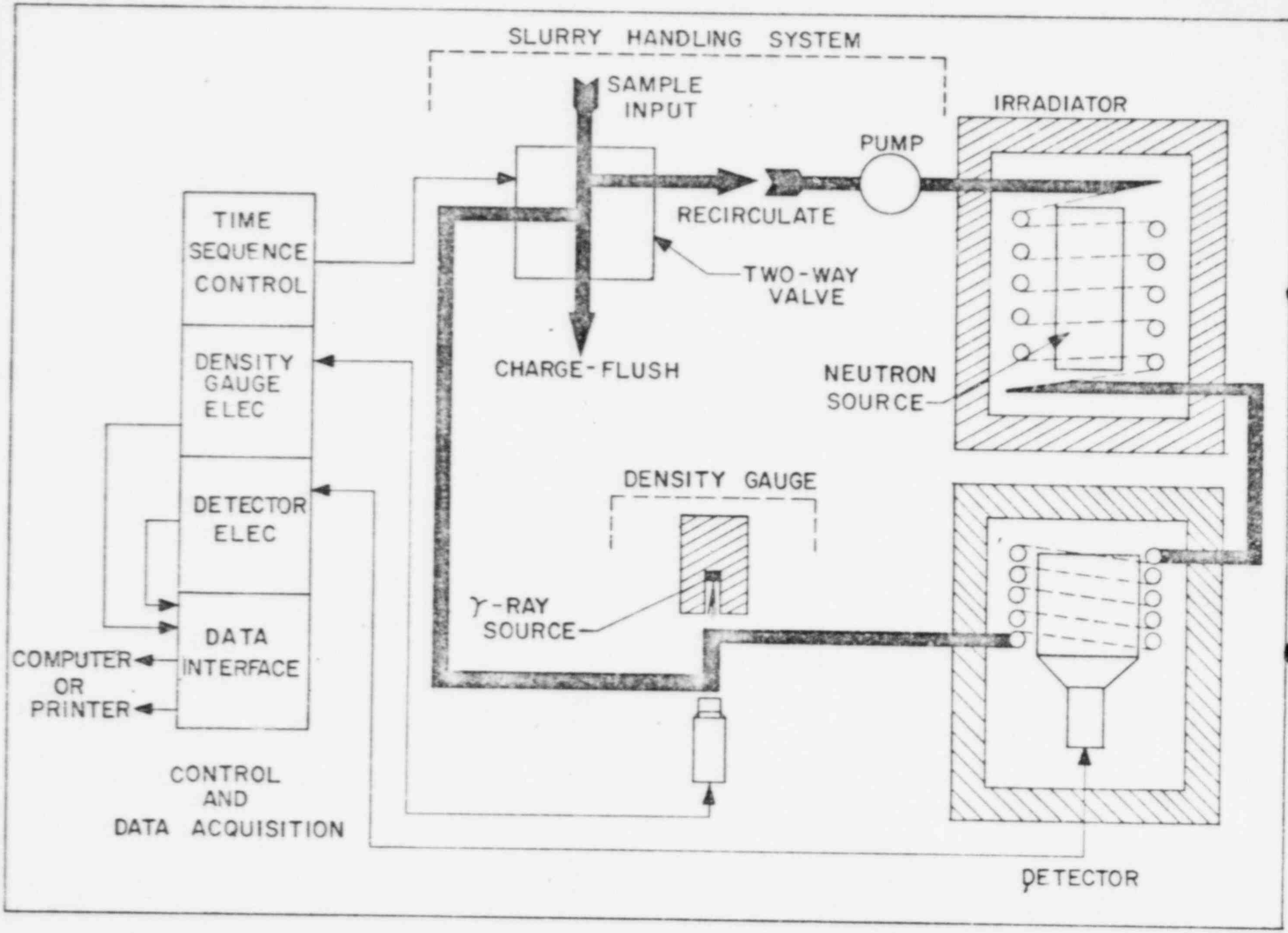
a) Exposure to radiation outside the shield under normal operating conditions;
b) Failure of the source capsule inside the shield;
c) Exposure to radiation under emergency conditions;
d) Disposal of the activated materials.

Density Channel

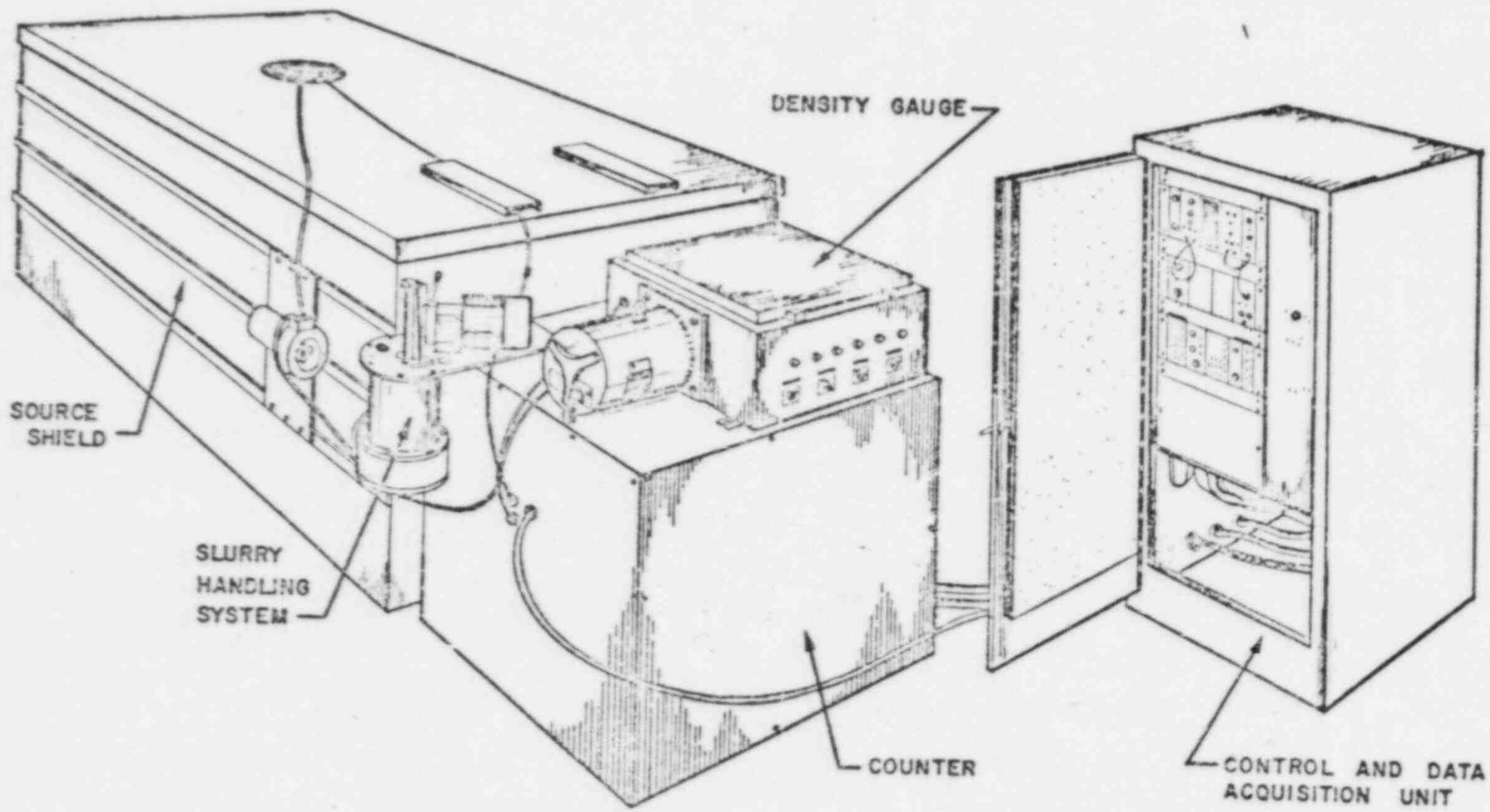
The density channel is shown in the drawing titled "Nola I Density Gauge". The 5176 source head acts as a complete storage container for the 500 mCi Cs-137 sealed source, Texas Nuclear Model 570-57157C, both prior and subsequent to installation of the system. The radiation levels one foot from any accessible surface are less than 0.5 mR/hr. In the event work must be done inside the detector box, the shutter will be closed and locked before such work begins. This source will be leak tested at least once every six months in accordance with leak test procedure QT/1K (see appendix). No waste disposal is involved. If the use of the gauge is discontinued, the source will be returned to Texas Nuclear for disposal.

Silicon Channel

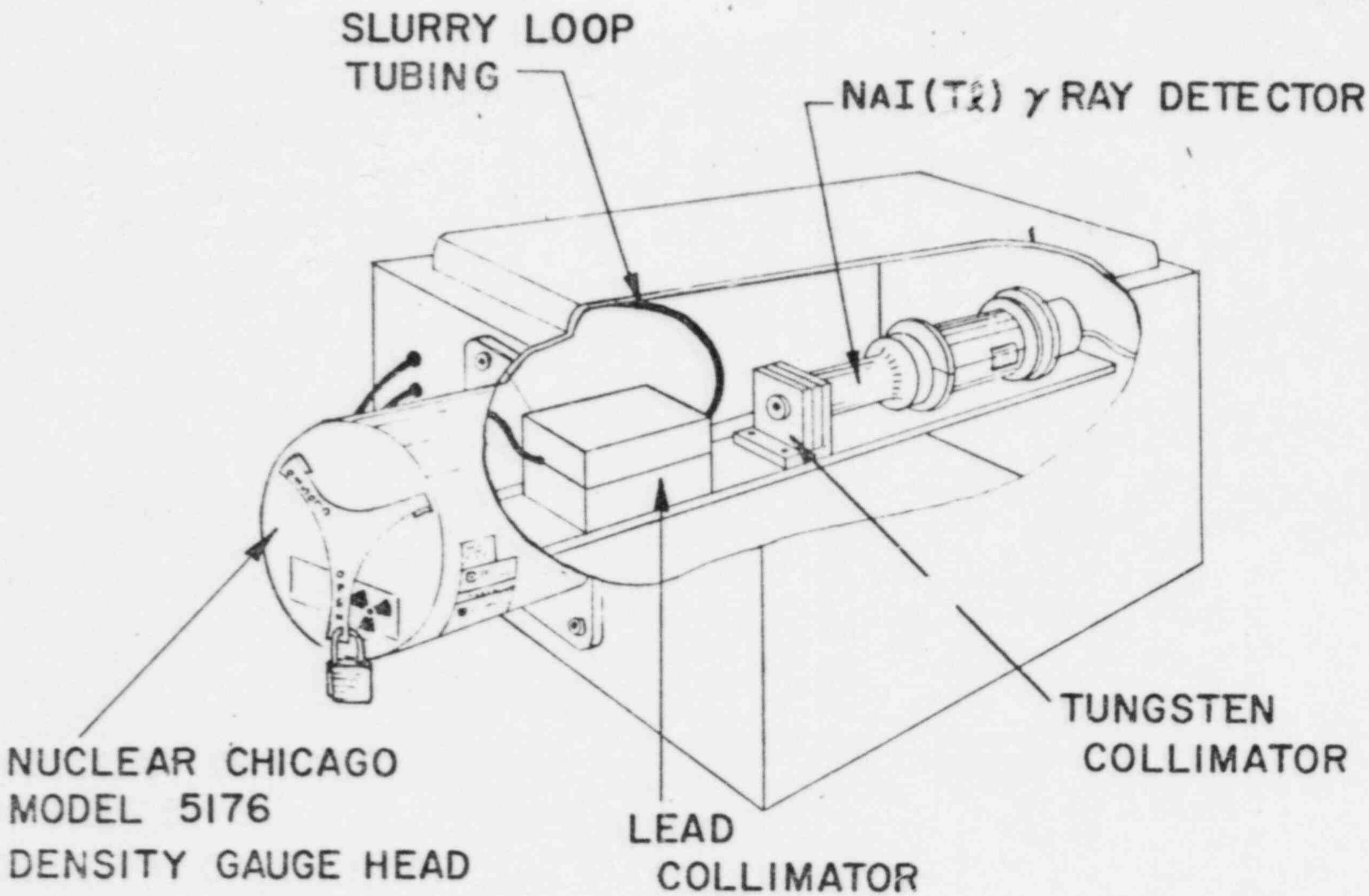
The construction of the shield is detailed on the drawing titled "Neutron Source Shield" (see appendix) and schematically shown in the figure titled "Nola I Irradiator". The source is threaded onto a stud at the bottom of the inner cell. The irradiate cell slips over the source and can be installed and removed without moving or unshielding the source.



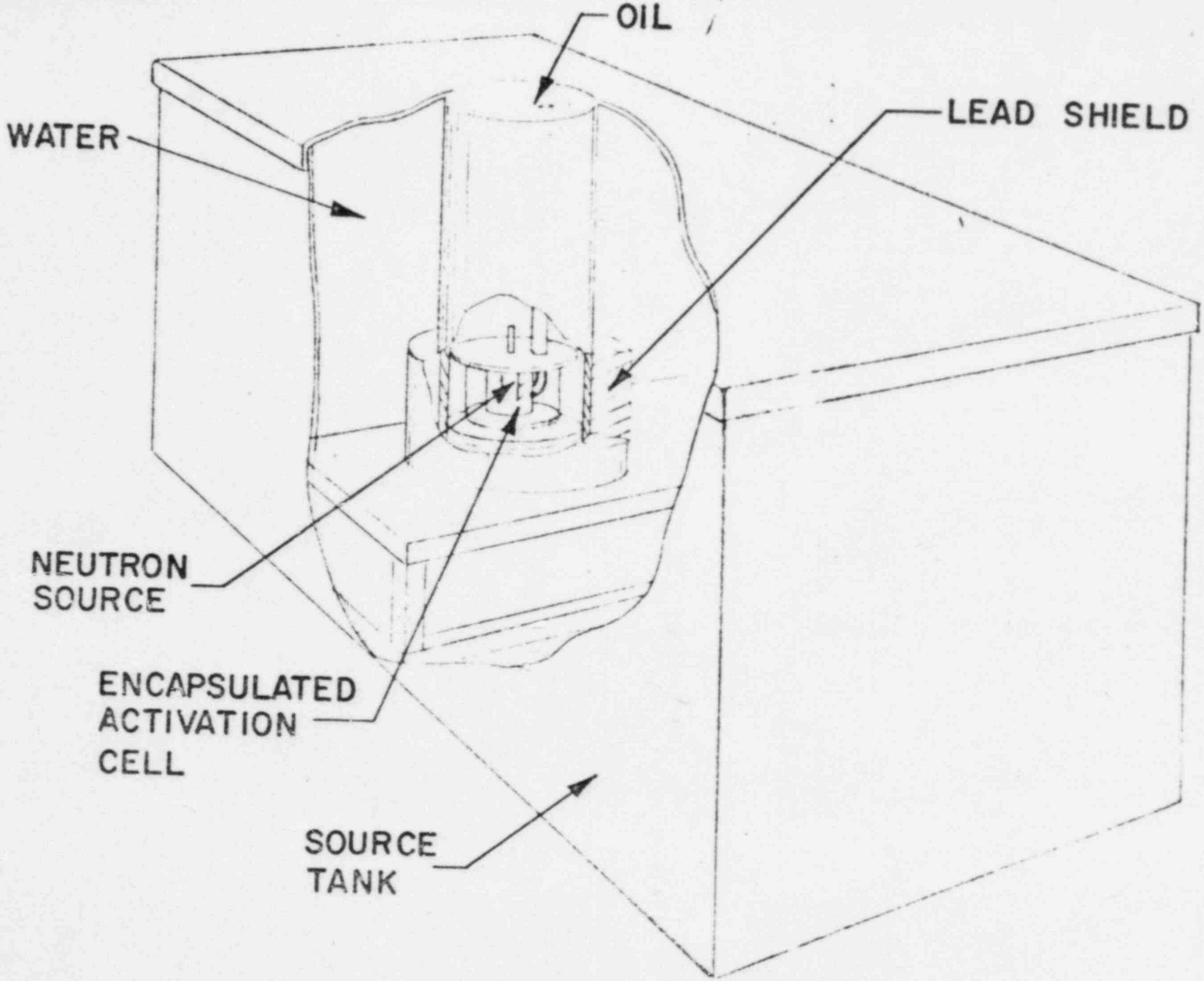
SCHEMATIC REPRESENTATION OF NOLA I



NOLA I SILICA ANALYZER



NOLA I DENSITY GAUGE



NOLA I IRRADIATOR

The Plutonium 238-Beryllium neutron source contains approximately 2.9 grams of Plutonium-238 as an oxide mixed with 15.2 grams of Beryllium. The neutron emission rate of the source is 1.1×10^8 n/sec., and the source was fabricated to the specifications shown on the drawing labeled "Pu8Be-Source Capsule" by Monsanto Research Corporation, Dayton, Ohio.

An analysis of pressure build-up due to alpha particle decay of the contained Pu-238 was made. This analysis was based upon a maximum loading of 4.24 grams of PuO_2, 80% enriched in Pu-238 at an initial pressure of one atmosphere. We assumed that the Helium obeyed the Ideal Gas Law and that ambient temperature was 70°C. We additionally said that 30% of the internal volume was void due to the approximate 70% compaction of theoretical density that one gets after pressing the PuO_2-Be pellet.

In the activation analysis system one can estimate the useful life of the source to be 80 years, based on the required sensitivity of the measurement. This would mean a pressure build-up of approximately 400 psia. One can calculate the bursting pressure of the inner capsule, using the tensile strength of 304 SS as 85,000 psi, to be greater than 6,400 psia. Prototypes of this capsule have been tested under American National Standards Institute procedures and classified E43333.

Radiation exposure rates outside the neutron source shield are shown at typical survey points on the drawing labeled "Neutron Source Shield". The source itself is shielded as shown, with lead and water on all sides except the top, which is covered by 33 inches of oil. This filling insures access to install or remove the teflon irradiation cell without undue radiation exposure (reference Cell Check and Removal Procedure). The cover plate has a cable and lock to insure that only authorized personnel have access to the cell. As usual, the shield is massive and the exposure rates are very low due mainly to the high sensitivity of the system detectors rather than personnel exposure considerations. The sensitivity of these detectors also provides an additional margin of safety, since they will indicate a change in performance if some abnormality occurs. Clearly, exposure to radiation outside the shield is minimal.

The large water shield also had a low water warning system consisting of a Cutler-Hammer Level Probe, located approximately one-half inch below the tank top, and connected to a Cutler-Hammer standard duty fail safe relay. The alarm circuit will indicate when the water level is approximately one inch below the tank top. At that time, one would not observe any appreciable increase in the dose rates as presented. Lights on the control panel indicate the status of the water level. A contact closure is also provided for remote alarms if desirable.

The water shield has a chemical additive to inhibit corrosion and organic growth identified as NALCO 39-L, and supplied by

Nalco Chemical Company
5757 Bellaire Blvd.
Houston, Texas.

Water replenishment, if ever necessary, would be a manual operation as there is no provision for automatic filling.

The physical location of the sample room, the building construction and general house-keeping conditions make it unlikely that conditions could exist which would endanger the shielding properties of the primary container. Although we cannot envision the accident, if such occurred, we would attempt to evacuate personnel from the area of the source, notify the Radiation Safety Officer and Texas Nuclear Health Physics, and await instructions and/or the arrival of trained personnel to evaluate the situation. However, the dose rates are not so high as to preclude maintenance on the tank. One can estimate the unattenuated dose rate at a meter to be slightly more than 100 mrem/hr by using:

a) neutron emission = 10^8 n/sec,
b) average first collision dose in tissue = 4.0×10^{-9} rad/n/cm^2,
c) mean quality factor = 8.5 for Pu8-Be neutrons,
d) adding the gamma contribution from both the 4.43 MeV state of C-12 and the 2.2 MeV emission from neutron capture in Hydrogen.

Additionally, note that the source is not unshielded if all the water is out of the tank. There is a 5 inch oil bath plus the irradiation cell and the 20 inch O.D. lead half-annulus to consider. In fact, except for near the floor level, and the tank end away from the large crystal detector, the total dose rates would not exceed 15 mrem/hr at the nearest point of the shield tank with no water.

Failure of the source inside the shield is remote at best. This type of capsule construction has been used for some time with few failures. Also, a failure of the source would change the optimized geometry and this would immediately affect the operation of the system. Therefore, we propose to leak test this source using the procedure entitled "Leak Test of Activation Analysis Sources", (see Appendix) at least once every six months under normal conditions, and at any other times the operational data lead us to suspect that some source or cell abnormality has occurred. In the event the leak test is positive, we will discontinue use of the system, secure the room and await further instructions from Texas Nuclear and the Hibbing Safety Officer. We believe that even a ruptured source could be safely contained for some time in the shield with little probability that contamination would be a hazard outside the container.

The following are additional items that are an integral part of our program:

a) The system will be installed by trained personnel of Texas Nuclear Corporation.
b) Personnel will receive training in the operation and hazards of the activation analysis system by Texas Nuclear personnel.
c) Radiation surveys will be made at the time of installation by Texas Nuclear and copies will be retained for inspection.
d) Personnel working around the activation analysis system will not use personnel monitors. It is unlikely that any individual can approach a whole body dose of 0.125 rem per quarter.
e) Personnel will not remove the source from the primary shield. In the event that circumstances lead us to believe that the shield is no longer an integral unit, personnel will be removed from the area and Texas Nuclear will be notified.

f) The pumping system will not be turned off with material in the irradiate cell during normal operation. Prior to shutdown, we will flush the system with water. To insure that no material remains in the irradiate cell, we will continue to flush and drain until the gamma spectrometer count rate approaches background.

g) In the event the use of the system is discontinued, the removal and disposal of the radioactive material will be handled by Texas Nuclear.

These points and included procedures will be incorporated in the operations manual provided by Texas Nuclear.

There is only very low-level radioactive waste generated in this system. In operation (reference "Schematic Representation of Nola I") a small sample of iron ore slurry is recirculated through the activate cell and count cell for five minutes. It can then be dumped either into a waste line or back into the produce line. None of the activated material is ever released to any area that directly connects to any life support chain.

The iron ore slurry has as its principal constituents Fe_2O_3 (60-70%) and SiO_2 (3-20%). Table I lists some data on the more prominent activation reactions possible. Consider that in operation we put in 100 grams of iron ore for a five minute irradiation every cycle. For neutron irradiations of this type, the formula

$$A = \frac{N n_f \sigma S}{(3.7 \times 10^{10})}$$

where A = Activity in curies
n_f = Neutron flux
S = Saturation factor - $(1-e^{-\lambda t})$
N = Number of target atoms available
σ = Activation cross section

will estimate the amount of activity produced per irradiation within an order of magnitude.

However, experimentally it has been determined, in a five minute count period, that the Si^{28} (n,p)Al^{28} reaction produces about 1.5×10^{-2} μCi of Al^{28} in the system.

All the other reactions, except Fe^{54} $(n,\gamma)Fe^{55}$ have comparable cross-sections, but will not produce as much radioactive material as the abcve reaction because their half-lives are long compared to the irradiation time. Therefore, the saturation factor for these reactions is much smaller.

In summary, we propose that no significant hazard exists either to employees or the general public, in the routine release of the amounts of radioactive material produced in this system. We, therefore, will not make routine monitoring or sampling part of our safety program.

Element	Isotope Activated and Abundance	Type of Reaction and Cross Section at 14 MeV (mb)	Activation Threshold (MeV)	Product Nuclide	Half-Life of Activity	Gamma-Ray Energies (MeV) and Relative Abundances
O	O^{16} (99.8%)	(n,p), 40	10.0	N^{16}	7.14 sec	6.1, 7.1
Si	Si^{28} (92.2%)	(n,p), 160	3.8	Al^{28}	2.3 min	1.77
Si	Si^{30} (3.09%)	(n,γ), 110 *	-	Si^{31}	2.62 hrs	1.26 (0.1)
Fe	Fe^{54} (5.82%)	(n,γ), 2500 *	-	Fe^{55}	2.7 yrs	0.006
		(n,p), 375	2.0	Mn^{54}	290 days	Cr X-rays
Fe	Fe^{56} (91.7%)	(n,p), 110	3.9	Mn^{56}	2.58 hrs	0.845 (100) 1.81 (30) 2.13 (20)

* Thermal cross section

TABLE I

SUMMARY OF RADIATION SAFETY PRECAUTIONS

A. NOLA Density System

1. Cs-137; 500 mCi in a lead-filled source head.
2. Radiation survey provided at installation and need not be repeated.
3. Leak test once every three years. (QT/1K)*
4. Insure that the source shutter is closed during all maintenance on the electronics and leak testing.

B. NOLA Activation Analysis System

1. Pu-238-Be emitting 1.1×10^8 n/sec.
2. Radiation survey provided at installation and need not be repeated.
3. Leak Test once every six months. (Leak Testing of Activation Analysis Sources)*
4. Radiation fields under normal conditions of use are very low.
5. The source is affixed to a plate at the bottom of the oil bath.
6. Loss of the entire water shield does not preclude repair with the source in place. The maximum radiation levels without the water shield would be approximately 15 millirem per hour at the tank.
7. Hibbing Taconite will not remove the source.
8. The slurry loop is always to be flushed with water prior to any shutdown.
9. Removal of the irradiate cell requires the handling of slightly radioactive materials. The activation products built-up will not create radiation fields that are high in terms of significant dose. One should be aware of them and, if appropriate instrumentation is available, monitor these fields during handling of the irradiate cell. Gloves should be worn during handling and the hands washed upon completion. All components should be cleaned and stored away from occupied areas until reassembly. Familiarization with the "Cell Check and Removal Procedure" is advised.

APPENDIX

TABLE OF CONTENTS

The gauge will not be dismantled or disassembled in order to leak test. Testing of the external seams, flanges and end plate is adequate.

1. Position the shutter actuator to the closed position. In the event that the shutter actuator is frozen, or appears damaged, notify the manufacturer of the density gauges.

2. Refer to "Calculations for Leak Testing" before proceeding. Remove the end cap from the end window of the G. M. Survey Meter, Eberline Model E-530 with HP-190 Probe, and with the use of the appropriate certified standard source, calibrate the unit on the proper scale. Insure that the most active side of the source faces the meter (the labeled side).

3. Obtain as many cotton-tipped applicators as indicated on the applicable drawing and slightly moisten. (Use water, alcohol or other solvent.)

4. With the shutter closed, wipe the areas of the source housing assembly at the locations designed on the appropriate drawings (care should be taken not to touch the Q-tips with the fingers following wiping operation).

5. Carefully place the swab end of each Q-tip as close to the window of the G. M. Tube on the Survey Meter as possible and read the results. The degree of removeable contamination may be readily evaluated by the method referenced above.

6. A leak test certificate will be completed and filed as a permanent record of the leak test. Amounts of radioactivity found will be recorded in microcuries (uCi).

7. One should send the wipes to a counting laboratory, such as Texas Nuclear, for additional analysis if any contamination appears on the wipes.

8. Note: Generally, it is advisable to use a certified standard source containing the same isotope as that being tested. However, this is not always necessary where the isotope is an energetic gamma emitter, e.g., Cs^{137} standard will work for Co^{60}, Ir^{192}, etc. A Cs^{137} standard source will be used.

The following "Calculations for Leak Testing" can be used to assess the presence of small amounts of radioactive material necessary during leak testing of gauging devices, using an Eberline Model E-530 with HP 190 Probe Portable Survey Meter that has a demonstrated sensitivity of 0.005 uCi or less of the radioactive source being leak tested.

1. Turn on unit; check battery, verify unit operation using the supplied check source; and remove end cap from G. M. Tube.

2. Place the appropriate certified standard source (Cs-137) disk on a clean flat surface and position the open end of the G. M. Tube over it. Set the range selector to give an approximate mid-scale reading. Note and record the observed readings; M_1 (in either c/m or mR/hr).

3. Remove the standard source away a few feet. With the G. M. probe in the same position, note and record the background (Bkg.) radiation in the same units as M_1.

4. Each swab end of the cotton tipped applicators used in wiping the gauge is in turn placed in the same geometrical position as the above noted standard. Note and record the observed meter reading, M_2. M_1 and M_2 must be taken in the same units.

5. To determine the degree of contamination in microcuries, a simple expression of proportionality is used:

$$\frac{A}{M_1\text{-Bkg.}} = \frac{C}{M_2\text{-Bkg.}} \quad \text{where}$$

A = activity of certified standard source in microcuries (uCi).

C = amount of removeable contamination in microcuries (uCi).

M_1 = survey meter reading with calibrated source in place in either milliroentgens per hour (mR/hr) or counts per minute (cpm).

M_2 = survey meter reading with swab in place in either milliroentgens per hour (MR/hr) or counts per minute (cpm).

Bkg.= survey meter reading with neither source nor swab near the G. M. probe in either milliroentgens per hour (mR/hr) or counts per minute (cpm).

CELL CHECK AND REMOVAL PROCEDURE

This procedure is utilized only after the counting data leads one to believe that some abnormality has occurred to the source or irradiate cell.

1. The operator should shut off the input of slurry, actuate the main valve, and open the water flush valve to clean the system.

2. Leak test the source according to the Leak Test Procedure, and do not proceed on cell removal until the results of the test are received.

3. If leak test results are negative, proceed with cell removal as outlined below and in the section titled "Removal of Activate Cell (reference Inner Source Shield Assembly Drawing).

4. Cover the working area at the top of the tank with absorbent material.

5. Position a plastic pan nearby so that the encapsulation cell can be lifted up through the oil and placed in the pan with no spillage. Handle the cell with rubber gloves which can be easily washed.

6. Measure the radiation exposure rates from the encapsulation cell to insure that the levels are low enough to proceed. For example, exposure rates at the surface of the cell up to 25 mR/hr should be considered acceptable.

7. The components of the encapsulation cell assembly should be monitored as disassembly proceeds, and all parts should be cleaned thoroughly as soon as practicable.

Texas Nuclear Corporation

LEAK TEST OF ACTIVATION ANALYSIS SOURCES

The system should not be dismantled to leak test the source.

1. Check the oil level with the dip stick. In the event the oil level is significantly below normal, close and lock the cover and notify Texas Nuclear Corp. Health Physics, immediately. Area code 512 - 836-0801, extension 310.
2. With the source and cell in position, dip out two to four ounces of shield fluid from down near the top of the cell, and pour it into the sample bottle supplied with the test kit. Close and lock the top cover plate.
3. Cap the bottle and tape the top closed to provide a positive seal.
4. Fill in the provided sheet with full identification, including model number, serial number, and date.
5. Place the bottle in the mailing tube and send as follows:

Texas Nuclear Corporation
P. O. Box 9267
Austin, Texas 78766
ATTN: HEALTH PHYSICS

Upon receipt of the oil sample, the fluid will be diluted in HCL (1-normal) and then filtered. It will then be evaporated to dryness and counted for alpha contamination. If found free of contamination, a notice will be sent via air mail, in the form of a leak test certificate, that the source is leak free. If the oil is found to contain detectable amounts of alpha contamination, notification will be sent, via telephone or telegram, advising that the oil bath should not be opened and that an additional leak test sample is to be taken and sent by air to Texas Nuclear for analysis. If the second sample contains alpha contamination, notification will be sent advising that Texas Nuclear personnel will be sent to remove the source for return to the manufacturer. Under no circumstances is the shield to be opened during this period of time.

U.S. Department
of Transportation

Research and
Special Programs
Administration

400 Seventh Street, S.W.
Washington, D.C. 20590

IAEA CERTIFICATE OF COMPETENT AUTHORITY

Special Form Radioactive Material Encapsulation

Certificate Number USA/0240/S
Revision 0

This certifies that the encapsulated source, as described, when loaded with the authorized radioactive contents, has been demonstrated to meet the regulatory requirements for special form radioactive material as prescribed in IAEA 1/ and USA 2/ regulations for the transport of radioactive materials.

I. Source Description - The source described by this certificate is identified as Monsanto Research Corp Model No. 24173 which is a tungsten-inert-gas welded double encapsulation constructed of stainless steel which measures .868" in diameter by 4.13" in length and is constructed in accordance with MRC drawing A24173-AA00.

II. Radioactive Contents - The authorized radioactive contents of this source consist of not more than 55 curies of Americium-241 or Plutonium-238 as oxide powder mixed with a neutron production target powder.

III. This certificate, unless renewed, expires December 31, 1986.

This certificate is issued in accordance with paragraph 803 of the IAEA Regulations 1/, and in response to the November 23, 1981 petition by Monsanto Research Corporation and in consideration of the associated information therein.

Certified by:

R R Rawl — December 28, 1981

R. R. RAWL — (DATE)

Chief, Radioactive Materials Branch
Office of Hazardous Materials Regulation
Materials Transportation Bureau

1/ "Safety Series No. 6, Regulations for the Safe Transport of Radioactive Materials, 1973 Revised Edition", published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

2/ Title 49, Code of Federal Regulations, Part 170-178, USA.

US Department
of Transportation

Research and
Special Programs
Administration

400 Seventh Street, S.W.
Washington, D.C. 20590

IAEA CERTIFICATE OF COMPETENT AUTHORITY

Special Form Radioactive Materials Encapsulation

Certificate Number USA/0042/S
(Revision 3)

This certifies that the encapsulated source, as described, when loaded with the authorized radioactive contents, has been demonstrated to meet the regulatory requirements for special form radioactive material as prescribed in IAEA 1/ and USA 2/ regulations for the transport of radioactive materials.

I. Source Description - The source described by this certificate is identified as Texas Nuclear Model 57157C which is a welded, double encapsulation constructed of stainless steel with external dimensions of 12.7mm (0.5 inch) in diameter by 19mm (0.75 inch) long. The source is fabricated in accordance with 3M Company Models 4F6S or 4D6L specifications.

II. Radioactive Contents - The authorized rad[illegible]active contents of this source consist of no more than 10 Ci of Cesium-137.

III. This certificate, unless renewed, expires April 30, 1989.

This certificate is issued in accordance with paragraph 803 of the IAEA Regulations 1/, and in response to the April 6, 1984 petition by Texas Nuclear, Austin, Texas, and in consideration of the associated information therein.

Certified by:

R R Rawl
Richard R. Rawl
Chief, Radioactive Materials Branch
Office of Hazardous Materials Regulation
Materials Transportation Bureau

April 24, 1984
(Date)

1/ "Safety Series No. 6, Regulations for the Safe Transport of Radioactive Materials, 1973 Revised Edition (As Amended)," published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

2/ Title 49, Code of Federal Regulations, Parts 100-199, USA.

Revision 3 - respecified description; extended expiration date.

CONTROL NO. 78049