UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

FEB 14 1983

MEMORANDUM FOR: Robert J. Doda, State Agreements Officer, Region IV

FROM: Myu A. Campbell, State Agreements Officer, Region I

SUBJECT: IMPROPERLY PACKAGED RADIOGRAPHY SOURCE

On January 26, 1983, a 200 Curie iridium-192 radiography source shipped by Gulf Nuclear Corporation of Webster, Texas was received by a New York State licensee, Nuclear Energy Services, Inc., Oswego, New York. Surveys of the package indicated radiation levels in excess of DOT limits (non-routine event notice 83-04). The enclosed letter from Nuclear Energy Services, Inc. to the State of New York Department of Labor documents the surveys of this package as received. It appears that the high radiation levels resulted from a defect in the package shielding.

Please provide this information to the State of Texas so that they can pursue this matter with Gulf Nuclear.

Myu A. Campbell
State Agreements Officer

Enclosure: Letter dated January 29, 1983 from
Nuclear Energy Services, Inc. to
New York Department of Labor

cc:
J. M. Allan, RI
J. O. Lubenau, OSP
F. N. Brenneman, RI

NUCLEAR ENERGY SERVICES, INC.
SHELTER ROCK ROAD
DANBURY, CONNECTICUT 06810
(203) 748-3581

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January 29, 1983

Mr. Lewis Calvisino
State of New York, Dept. of Labor
Division of Safety and Health
Radiological Health Unit
Two World Trade Center
New York, New York 10047

Dear Mr. Calvisino:

The following synopsis describes the actions taken after having received 200 curies of Iridium 192 emitting radiation exceeding the applicable regulatory limit:

On 1-26-83, a shipment of one 200 curie IR^{192} radioactive isotope was received by Nuclear Energy Services (NES) for use in radiography at the Nine Mile Point Unit #1 Nuclear Generating Station in Oswego, New York. This isotope was shipped by Gulf Nuclear Corporation of Webster, Texas and was delivered by Federal Express to Nine Mile Point.

The shipping container holding the isotope was a Gulf Nuclear Model U110A S/N 13, and was packed in a 15" diameter drum type overpack. Upon initial survey, the radiation dose rate from the drum was found to exceed regulatory limits. A decision was made to move the drum to an isolated area in the reactor building where it could be safely locked in a storage box and access would be limited.

The storage box was positioned so the radiation leak was against a concrete wall that had no access to its other side. The area was then appropriately barricaded with rope and signs.

Immediately notified were Mr. Edward Leach, Radiation Protection Superintendent of Niagara Mohawk Power Company (NMPC), and Mr. Otis Gamble, Radiation Safety Officer of Nuclear Energy Services, Conam Inspection Division.

After meeting with NMPC and discussing the situation, additional surveys were made with the shipping container removed from its overpack. It was found that a small diameter pencil-like beam of radiation was passing out of one side of the container. All other sides were well within limits. (See attachments for survey readings).

At the completion of the surveys, your office was informed. Mr. Steve Hudson, Nine Mile Point Resident NRC Inspector who was informed of the

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(continued)

January 29, 1983

situation by Mr. Leach, notified the Nuclear Regulatory Commission, Region 1. I notified the Syracuse office of Federal Express who, in turn, contacted their Radiation Consultant, Dr. Roy Parker. Notification went to Gulf Nuclear from Mr. Otis Gamble.

On 1-27-83, a leak test was performed to insure that there was no contamination present. Results were less than .001 microcuries (see attached report).

On 1-28-83, the isotope was transferred out of the shipping container into an empty Gulf Nuclear Model 40V camera which was owned by N.E.S. No problems occurred during the transfer and the radiation levels on all sides are within limits. The empty shipping container is now ready for shipment back to Gulf Nuclear with the defective area clearly marked out. No overexposure occurred to N.E.S. or Nine Mile personnel.

If any additional questions arise, please contact me at (315) 342-5243, ext. 15.

Very truly yours,

RA Zieber

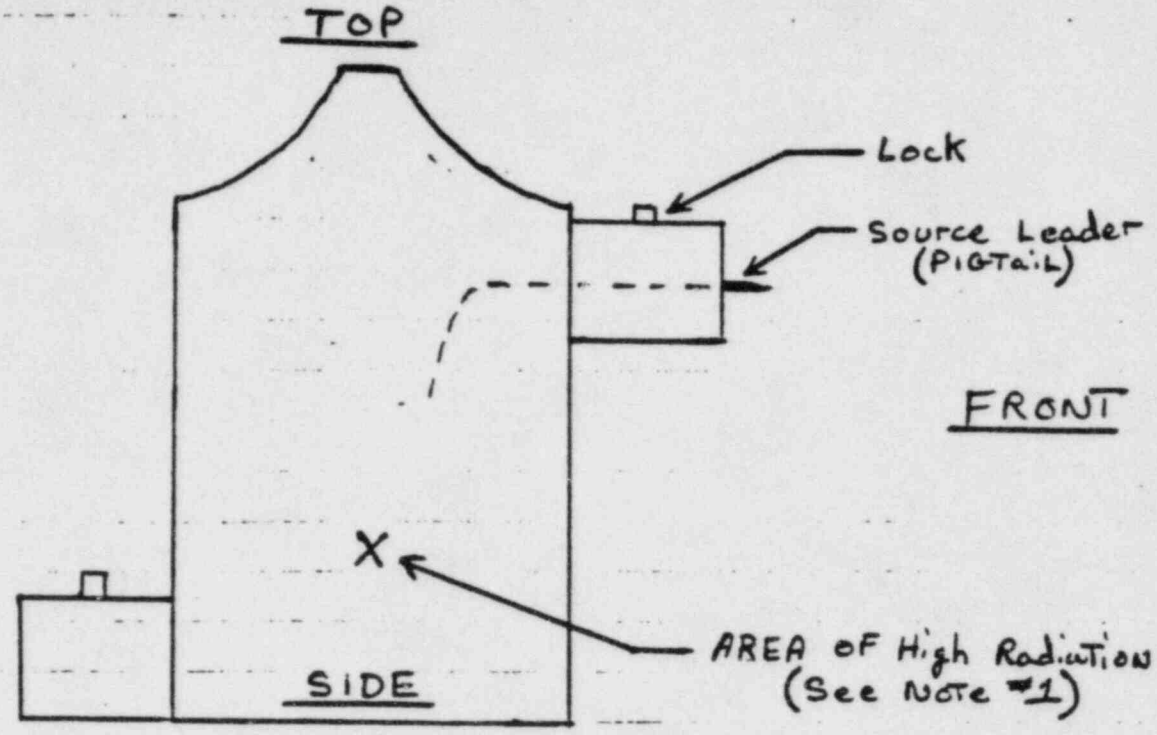
Rick A. Zieber
Nine Mile Point
N.E.S. Project Supervisor

cc: Otis Gamble (CONAM)
Dr. Roy Parker (FEDERAL EXPRESS)
Edward Leach (NMPC)
C.P. Hopcraft (GULF NUCLEAR)
Ms. Myu Cambell (NRC, REGION 1)

RAZ:emc
Atts.

GULF NUCLEAR

Model U110A Shipping Container



NOTE #1: AREA OF HOT SPOT is approx. ½" in diameter on surface of Shipping Container. Beam spread equaled about 3" at a distance of 3' from the container.

Survey Readings

Distance	From Overpack (As Received)		Shipping Container (Removed overpack)	
	HOT SPOT (max)	other areas (max)	HOT SPOT (max)	other AREAS (max)
CONTACT	Greater Than 1R	15 mR	Greater Than 1R	160 MR
6"	950 MR	2 MR	Greater Than 1R	20 MR
3'	100 MR	1 MR	150 MR	8 MR

Surveys Taken By: RA Zielke

Radiation Survey Log Sheet

☐ ROUTINE
☒ SPECIAL

Survey No.
N 74099
Date 1/27/83
Time 1300 - 1700
RWP No.
Air Sample Log Sheet No.

LOCATION Rx Bldg El 281 N. Hall @ Source Storage Area

	Cutie Pie	Teletector	~~Thyac~~ RO-2A	~~Nemo~~ Bc-4	R-5
INSTRUMENTS USED	# ____	# 25412	# 1097	# 159	# 40

SMEARS USED ____ Paper Towel ____ Atomic Wipe 2 Disc

DESCRIPTION OF SURVEY Radiation and Contamination Survey of 200 ci Source for Source Leak Test and Dose Rates of Pig with Source inside Pig

SURVEY CONDITIONS, RESULTS, AND REMARKS

Found:

Source Leak Test: 2 Smears Taken

	#1	#2
Alpha -	1 cpm	1 cpm
Beta -	85.6 cpm	97 cpm

$$\# \mu Ci = \frac{[(4.5 \times 10^{-7} \mu Ci / cpm)(Net\ cpm)]}{EFF}$$

μCi β-γ Smearable = 2.78×10^{-6} μCi < 0.001 μCi

μCi α Smearable = 7.79×10^{-7} μCi < 0.001 μCi