

May 7, 1990

The Honorable Benjamin A. Gilman  
United States House of Representatives  
Washington, D.C. 20515-3222

Dear Congressman Gilman:

I am responding to your letter of March 9, 1990, concerning releases of slightly radioactive water into the Indian Kill Reservoir from the Cintichem plant located in Tuxedo, New York. The releases, which were unauthorized, are reported to have occurred within a short time period on February 9, 1990. The water released from the plant contained small amounts of radioactivity which were sufficiently diluted so that the reservoir water remained well below the limits of EPA's drinking water standards in 40 CFR Part 141. Further, the radioactive component of the released water consisted of isotopes with short half-lives (maximum of about eight days). Thus, the releases did not pose an imminent threat to public health and safety.

For your information, I have enclosed a brief description of the operation of the facility and a summary of the releases (Enclosure 1). As you know, this incident prompted NRC to issue an order on February 13, 1990, requiring Cintichem to keep the reactor in a shutdown condition and submit a comprehensive plan to prevent the recurrence of unauthorized and undetected releases (Enclosure 2). On April 4, 1990, Cintichem announced a voluntary decision to permanently shut down and decommission the reactor. Cintichem now proposes to cease all processing of radioisotopes at the site, decontaminate the site in accordance with regulatory requirements, and seek termination of all NRC and State of New York licenses.

I can assure you that the NRC, in conjunction with the State of New York, will continue to follow this matter until it is resolved.

Sincerely,

**Original Signed By**  
James M. Taylor

James M. Taylor  
Executive Director  
for Operations

Enclosures:

- Status of Actions Related to Releases to Indian Kill Reservoir by Cintichem, Inc., Tuxedo, New York
- Cintichem Order

cc: See Next Page      JTaylor      RBernero  
 Distribution:      JSniezek      JRoth, RI  
 EDO 5272      HThompson      FCresenzo, SRI, IP-2  
 CRC-90-0278      JBlaha      LRossbach, SRI, IP-3  
 OCA      TMartin, RI  
 EDO R/E      (Originated by RI:Roth)

OFC	:cc:See Next Page:	OCA	:	:	:	:
NAME	:	JM	:	DR	:	:
DATE	:	5/14/90	:	5-7	:	:

cc w/enclosure:  
Public Document Room (PDR)  
Local Public Document Room (LPDR)  
Nuclear Safety Information Center (NSIC)  
State of New York

Cintichem, Inc.  
ATTN: Mr. James J. McGovern  
Plant Manager  
P. O. Box 816  
Tuxedo, New York 10987

Cintichem, Inc.  
ATTN: Mr. W. G. Ruzicka  
Manager, Nuclear Operations  
P. O. Box 816  
Tuxedo, New York 10987

Cintichem, Inc.  
ATTN: Mr. T. Vaughn, Manager  
Health, Safety and Environmental  
Affairs  
P. O. Box 816  
Tuxedo, New York 10987

Cintichem, Inc.  
ATTN: Mr. D. D. Grogan  
Manager, Radiochemical Production  
P. O. Box 816  
Tuxedo, New York 10987

Town of Tuxedo  
ATTN: Ms. Annette R. Dorozynski  
Supervisor  
P. O. Box 725  
Tuxedo, New York 10987

US EPA, Region II  
ATTN: Mr. Florie Caporuscio  
Geologist  
M/S ZAWM-RAD  
26 Federal Plaza  
New York, NY 10278

Dr. William Vernetson  
Director of Nuclear Facilities  
202 Nuclear Science Center  
Department of Nuclear Engineering Sciences  
University of Florida  
Gainesville, FL 32611

Cintichem, Inc.  
ATTN: Mr. M. D. Johnson  
Reactor Supervisor  
P. O. Box 816  
Tuxedo, New York 10987

Sterling Forest Corporation  
Berle, Kass and Case  
ATTN: Mr. Charles Warren  
45 Rockefeller Plaza  
Room 2350  
New York, NY 10111

STATUS OF ACTIONS RELATED TO RELEASES TO INDIAN KILL RESERVOIR  
BY CINTICHEM, INCORPORATED, TUXEDO, NEW YORK

Cintichem (the licensee) irradiated uranium oxide targets in its pool-type reactor. The irradiated target material was transferred through a water-filled canal to a storage pool called the gamma pit. From the gamma pit, the targets were moved into hot cells where a variety of radioisotopes produced in the irradiation process were separated, refined, and subsequently shipped for use in various radiopharmaceuticals to diagnose and treat a number of medical conditions.

On December 12, 1989, NRC Region I received notification that the licensee, through its routine sampling program, had identified slightly radioactive contaminated water in a storm drain in the on-site parking lot. However, samples from a number of other surface and groundwater locations on the site revealed no other measurable radioactive contamination. No obvious source of the contamination was identified. In particular, the on-site retention pond, which receives water from the storm drain system and which drains to the Indian Kill Reservoir, showed no detectable contamination. The licensee provided NRC Region I with information on a daily basis from that point on. On January 2, 1990, Region I staff met with the licensee at the facility and began to monitor the licensee's actions to identify the source of the contamination. On January 5, following the latest in a series of cyclic changes in the amount of contamination detected in the storm drain, NRC Region I instructed the licensee to ensure that no water from the retention pond was drained to the reservoir prior to sampling and analyzing the samples. On January 26, the licensee identified the source of the contamination in the storm drain as coming from a ventilation exhaust duct from the hot cells. Until February 9, no measurable activity was observed by the licensee or the NRC in the retention pond.

On February 9, the licensee reported to Region I that contamination was found in the retention pond. Several radioactive isotopes were identified, only one of which (iodine-131) was slightly in excess of the NRC's maximum permissible concentration for release to an unrestricted area.

The NRC immediately dispatched a team of specialists to the facility on February 9. When the licensee's findings were confirmed by the NRC, the licensee agreed not to allow water from the retention pond to enter the reservoir. The licensee then began pumping the contents of the retention pond to on-site holding tanks and additional holding tanks that were brought on site. The licensee processed this water to remove the radioactivity and transferred it to another tank for sampling and analysis prior to discharge downstream of the Indian Kill Reservoir.

Between February 9 and 16, the NRC team monitored the licensee's corrective actions, confirmed that the reactor had been shut down, confirmed the licensee's measurements of contamination in water, and ensured that all water released met regulatory limits. The team also monitored the licensee's actions to identify other sources of leakage. The licensee identified a concrete wall in a portion of the gamma pit as one source of leakage. Another source was identified in a part of the reactor coolant system called the hold-up tank. The leakage from one or both of these sources apparently went to the retention pond through a drainage system.

On February 13, 1990, the NRC issued an Order requiring the licensee to keep the reactor shut down and to submit a comprehensive plan to correct the situation and prevent its recurrence.

On February 20, the licensee advised the Region I staff that, on February 9, several releases from the retention pond were made to the reservoir. While those releases had been sampled, the sample analyses were not completed at the time of the release. The releases were reportedly made to preserve the integrity of the retention pond, which had swelled due to water runoff after a heavy rainfall. When the results of the analysis were obtained a few hours after sampling on February 9, those analyses indicated the presence of contamination in the retention pond, which was then reported to Region I on that date. However, the fact that several releases were made to the reservoir on February 9 before the samples were analyzed was not provided to the NRC until 11 days after the fact. As a result, the NRC, on February 23, directed the licensee to (1) stop all intentional releases of water from the on-site retention pond to the reservoir; (2) eliminate leakage/seepage from the retention pond to the reservoir through the discharge pipe; (3) divert all discharges from the retention pond to a discharge point in the creek downstream of the reservoir, but only after sampling and analyses to ensure that the radioactivity is below applicable maximum permissible concentrations; and (4) immediately notify the NRC Region I Office if radioactivity is measured in the retention pond above background levels or if any unmeasured releases occur. All subsequent releases from the retention pond were made in accordance with the NRC directive, to the best of NRC's knowledge.

On March 5, 1990, in response to the NRC Order, the licensee submitted a plan for locating and repairing all leaks and for verifying the effectiveness of the repairs. Implementation of the plan includes various tests of the integrity of the reactor coolant system, repair of all identified leaks, retest of all systems for water leakage, and development and installation of a monitoring system or program for the early detection of leaks in the reactor system.

On April 4, 1990, the licensee announced a voluntary decision to permanently shutdown and decommission the reactor. On April 11, 1990, the licensee stated that it plans to cease all processing of radioisotopes at the site, decontaminate the site to meet regulatory requirements, and seek termination of all NRC and State of New York licenses.

NRC representatives, along with representatives of the New York State agencies responsible for regulating activities at Cintichem involving radioactive material, have met and will continue to meet, as requested, with local officials and members of the public to inform them of the situation at Cintichem. Both NRC and the State of New York agree that the contaminated releases to the reservoir, though undesirable, do not represent a hazard to public health and safety.

UNITED STATES  
NUCLEAR REGULATORY COMMISSION

Cintichem, Incorporated  
P. O. Box 816  
Tuxedo, New York 10987

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Docket Nos. 50-54  
70-687  
License Nos. R-81  
SNM-639  
EA 90-033

ORDER MODIFYING LICENSE  
(EFFECTIVE IMMEDIATELY)

I

Cintichem, Incorporated (the "Licensee") is the holder of License Nos. R-81 and SNM-639. License No. R-81 and License No. SNM-639 authorize the Licensee to produce and process radioisotopes. License No. R-81 was issued by the Nuclear Regulatory Commission (the "Commission" or "NRC") on September 7, 1961, was most recently amended on March 14, 1989, and is due to expire on June 30, 2000. License No. SNM-639 was most recently renewed by the NRC on October 19, 1984, was most recently amended on May 17, 1989, and is currently under timely renewal. Other activities involving radioactive byproduct material are conducted at this site under the authority of the State of New York.

II

On February 9, 1990, the Licensee reported to the NRC Region I office the identification of an unmonitored release of radioactively contaminated water from the facility's reactor building to an onsite retention pond.

The rapid and unexpected buildup of radioactivity in the retention pond, combined with the increase in the pond level due to rainfall the night of February 9 and the morning of February 10, indicates a significant potential for radioactive releases in excess of regulatory limits. An NRC inspection team was dispatched to the facility, and arrived at the facility on the evening of February 9, 1990. Subsequently, the team was informed that the uncontrolled release of radioactivity to the pond apparently resulted from a failure of part of the concrete wall of the gamma pit. (The gamma pit is a water-filled pool which is used for the temporary storage of radioactive material.)

Subsequently, on February 12, the Licensee informed the NRC inspection team that another concrete vessel on site, namely, the holdup tank (which is located in the reactor building and which is used to allow the decay of short-lived isotopes in the reactor coolant), also apparently had developed a leak.

The foregoing relates to matters subject to the NRC's jurisdiction.

### III

The concurrent identification, within a very short time period, of the failure of two concrete vessels, resulting in the uncontrolled release of radioactively

contaminated water to the site environs, demonstrates that the Licensee cannot presently provide reasonable assurance that continued operation under its licenses will be in compliance with Commission requirements. Therefore, continued operation of the facility without additional action is inconsistent with the Commission's requirements.

In view of the potential risks to the public from uncontrolled releases of radioactively contaminated materials from the facility, I have determined, pursuant to 10 CFR 2.204, that public health, safety and interest requires that this Order be made immediately effective.

#### IV

Accordingly, pursuant to Sections 57, 104, 161b., 161c., 161i., and 161o., 182, and 186 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR 2.204 and 10 CFR Parts 50 and 70, IT IS HEREBY ORDERED, THAT LICENSE NOS. R-81 AND SNM-639 ARE MODIFIED, EFFECTIVELY IMMEDIATELY, AS FOLLOWS:

A. The reactor remain shut down until such time as the Licensee:

1. Submits to the NRC, for its review and approval, a plan to:

- a. Promptly identify, by inspection, existing locations of leaks of radioactively contaminated material from the facility;
  - b. Promptly repair all existing leaks, and assure their effectiveness;
  - c. Establish and implement a monitoring program to assure the prompt identification of future leaks of radioactively contaminated material from the facility;
2. Implement the plan; and
  3. Notify the NRC, in writing under oath or affirmation, that the plan has been completed, and the Regional Administrator, Region I, authorizes restart of the reactor.
- B. Following authorization for restart pursuant to paragraph A.3 above, the Licensee shall implement the monitoring program approved pursuant to paragraph A.1.c.
- C. Within 90 days of the date of this Order, the Licensee shall submit to the Regional Administrator, Region I, for review and approval, a detailed plan for identification of the root causes of the undetected and uncontrolled leaks of radioactive material, as well as any structural deterioration of the structures, systems, and components. The plan shall include a schedule with appropriate milestones.

- D. Upon completion of the plan set forth in Section IV.C, a report shall be submitted to the Regional Administrator, Region I, which describes the results obtained, and corrective actions taken or planned (with milestones) to address the identified problems.

The Regional Administrator, Region I may in writing relax or terminate all portions of the Order for good cause shown.

## V

The Licensee, or any person who is adversely affected by this Order, may request a hearing within 30 days of the date of this Order. A request for hearing should be clearly marked as a "Request for Hearing" and shall be submitted to the Secretary, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Chief, Docketing and Service Section. Copies of the hearing request also shall be sent to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, to the Assistant General Counsel for Hearings and Enforcement at the same address, and to the Regional Administrator, Region I, 475 Allendale Road, King of Prussia, Pennsylvania 19406. If a person other than the licensee requests a hearing, that person shall set forth with particularity the manner in which his interest is adversely affected by this Order and shall address the criteria set forth in 10 CFR 2.714(d). In the absence of any request for a hearing within the specified time, this Order shall be final without further Order or proceedings. A REQUEST FOR HEARING SHALL NOT STAY THE IMMEDIATE EFFECTIVENESS OF THIS ORDER.

If a hearing is requested, by the Licensee or a person whose interest is adversely affected, the Commission will issue an Order designating the time and place of any hearing. If a hearing is held, the issue to be considered at such hearing shall be whether this Order should be sustained.

FOR THE NUCLEAR REGULATORY COMMISSION



Hugh L. Thompson, Jr.  
Deputy Executive Director for  
Nuclear Materials Safety, Safeguards,  
and Operations Support

Dated at Rockville, Maryland  
this 13<sup>TH</sup> day of February 1990



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

**ACTION**

EDO Principal Correspondence Control

FROM: DUE: 04/02/90 EDO CONTROL: 0005272  
DOC DT: 03/09/90  
FINAL REPLY:

Rep. Benjamin A. Gilman

TO:  
Chairman

FOR SIGNATURE OF: \*\* PRI \*\* CRC NO: 90-0278  
Chairman Carr

DESC: CONCERNS RE CINTICHEM RADIOPHARMACEUTICAL PLANT EMPTING RADIOACTIVE WATER INTO THE INDIAN KILL RESERVOIR  
ROUTING: Taylor  
Thompson  
Blaha  
Scinto, OGC

DATE: 03/22/90

ASSIGNED TO: RI CONTACT: Russell  
~~IMSS~~ ~~Bernero~~

SPECIAL INSTRUCTIONS OR REMARKS:

CC: SGTR

IMNS Action  
Doc to Reg. Director's Office  
By 3/28/90  
rec'd 3/22/90

Region I  
has all the facts  
to answer this EDO.  
per RE Cunningham  
&  
C. Haughney  
3/22/90

OFFICE OF THE SECRETARY  
CORRESPONDENCE CONTROL TICKET

PAPER NUMBER: CRC-90-0278 LOGGING DATE: Mar 20 90  
ACTION OFFICE: EDO  
AUTHOR: Benjamin Gilman  
AFFILIATION: U.S. HOUSE OF REPRESENTATIVES  
LETTER DATE: Mar 9 90 FILE CODE:  
SUBJECT: Cintichem radioPharmaceutical plant  
ACTION: Signature of Chairman  
DISTRIBUTION: OCA to Ack, RF  
SPECIAL HANDLING: None  
NOTES:  
DATE DUE: Apr 4 90  
SIGNATURE: . DATE SIGNED:  
AFFILIATION:

Rec'd Off. EDO  
Date 3-21-90  
Time 3 p

EDO --- 005272

BENJAMIN A. GILMAN  
22D DISTRICT, NEW YORK

FOREIGN AFFAIRS COMMITTEE

SUBCOMMITTEES:

EUROPE AND MIDDLE EAST  
(RANKING MINORITY MEMBER)  
INTERNATIONAL OPERATIONS  
VICE CHAIRMAN,  
TASK FORCE ON  
INTERNATIONAL NARCOTICS CONTROL

# Congress of the United States

House of Representatives

Washington, DC 20515-3222

March 9, 1990

POST OFFICE AND CIVIL  
SERVICE COMMITTEE  
(RANKING MINORITY MEMBER)

SUBCOMMITTEE:  
INVESTIGATIONS

SELECT COMMITTEE ON  
NARCOTICS ABUSE AND  
CONTROL

SELECT COMMITTEE ON  
HUNGER

VICE CHAIRMAN,  
TASK FORCE ON  
AMERICAN PRISONERS AND  
MISSING IN SOUTHEAST ASIA

Mr. Lando W. Zech, Jr.  
Chairman  
Nuclear Regulatory Commission  
Washington, D.C. 20555

RE: Cintichem RadioPharmaceutical Plant  
Tuxedo, New York

Dear Mr. Zech:

I am writing with regard to a matter which I believe  
deserves your personal and immediate attention.

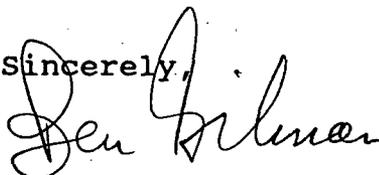
I have recently been apprised that the Cintichem  
Radiopharmaceutical Plant at Tuxedo, New York emptied 30,000  
gallons of slightly radioactive water into the Indian Kill  
Reservoir early last month. As you are aware, this plant has  
been experiencing difficulty due to an undetected radioactive  
leak at the plant.

Accordingly, I would welcome your review and any assistance  
which can be given regarding this important matter.

Thank you for your kind attention and cooperation.

With best wishes,

Sincerely,



BENJAMIN A. GILMAN  
Member of Congress

BAG:ptb

PLEASE REPLY TO:

WASHINGTON OFFICE:  
2185 RAYBURN BUILDING  
WASHINGTON, DC 20515-3222  
 TELEPHONE: (202) 225-3776

DISTRICT OFFICE:  
44 EAST AVENUE  
P.O. Box 358  
MIDDLETOWN, NY 10940-0358  
 TELEPHONE: (914) 343-6666

DISTRICT OFFICE:  
223 ROUTE 59  
MONSEY, NY 10952-3498  
 TELEPHONE: (914) 357-9000

DISTRICT OFFICE:  
32 MAIN STREET  
HASTINGS-ON-HUDSON,  
NY 10706-1602  
 TELEPHONE: (914) 478-5550