

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
REGION I
IRRADIATOR INSPECTION

(Field Notes)

Licensee <i>Isomedia, Inc.</i>	Facility <i>Parvippay, N.J.</i>												
License No. <i>29-15364-01</i>	Inspection Date <i>10/19/78</i>												
Principal Inspector <i>P. C. Jerman</i>	Other Accompanying Persons <i>None.</i>												
<table border="1"> <thead> <tr> <th>Individuals Interviewed</th> <th>Titles</th> </tr> </thead> <tbody> <tr> <td>a. Yves Doyle, retiring RSO & Gen. Mgr.</td> <td>e.</td> </tr> <tr> <td>b. Charles Ronk, new Gen. Mgr. RSO.</td> <td>f.</td> </tr> <tr> <td>c. John Macfield, Chairman of Board</td> <td>g.</td> </tr> <tr> <td>d. Bill McKinnon, Technician</td> <td>h.</td> </tr> </tbody> </table>	Individuals Interviewed	Titles	a. Yves Doyle, retiring RSO & Gen. Mgr.	e.	b. Charles Ronk, new Gen. Mgr. RSO.	f.	c. John Macfield, Chairman of Board	g.	d. Bill McKinnon, Technician	h.	<table border="1"> <tr> <td>Date of Interview <i>10/19/78</i></td> </tr> <tr> <td>Place of Interview <i>Office of C. Ronk.</i></td> </tr> </table>	Date of Interview <i>10/19/78</i>	Place of Interview <i>Office of C. Ronk.</i>
Individuals Interviewed	Titles												
a. Yves Doyle, retiring RSO & Gen. Mgr.	e.												
b. Charles Ronk, new Gen. Mgr. RSO.	f.												
c. John Macfield, Chairman of Board	g.												
d. Bill McKinnon, Technician	h.												
Date of Interview <i>10/19/78</i>													
Place of Interview <i>Office of C. Ronk.</i>													
Name of RSO <i>Yves Doyle - retiring</i> <i>Charles Ronk - new</i>	Telephone No. of RSO <i>201-857-2666</i>												

Enforcement Action(s)

None.

85

A. Scope of Program

1. Number of individuals occupationally exposed 25.
2. Type of Irradiator (eg. Pool, Pit, etc.) In Air - Rd. Storage
3. Number of Curies 1.4×10^6 Ci of Co.
4. Frequency of use: Continuous times per 6 days/week on 3 shifts

B. Exposure Evaluation

1. Personnel

- a. Film Badge ✓
- b. Dosimeter ✓
- c. Other _____

2. Facility

- a. Independent area radiation monitor Yes in labyrinth
- b. Survey meter when enter HRA Yes

C. Surveys

1. Radiation levels in unrestricted areas < 0.1 mR/hr *except near contaminated pool.*
2. Contamination smears in restricted area < 10 dpm
3. Leak Tests
 - a. Frequency Weekly
 - b. Method adequate Yes
4. Interlocks into HRA
 - a. Frequency of Testing Monthly
 - b. Functional at time of inspection Yes

c. Are they intentionally bypassed or deleted. Yes

No

(1) Procedure if yes

d. In accordance with license? Yes

e. Adequate? Yes

5. Routine maintenance of Hot cell equipment adequate. Yes No

D. Instrumentation

1. Adequate type and number: Yes No

2. Calibration as required: Yes No

E. Evaluation of Effluent

1. Liquid None.

2. Airborne No

F. Training

1. Std. Procedures Yes

2. Emergency Procedures Yes

3. NRC Regulations Yes

G. Signs/Posting

1. CRM Yes

2. CHRA Yes

3. 19.11 Yes

H. Evaluation of Incoming Packages (20.205)

None received

I. Disposal

No disposals made

*Plan to dispose of
trucks were moved
to S.C. Burial Ground, Newton
Products may take other
now unused sources.*

J. Evaluation of Outgoing Shipments - (DOT)

N/A.

K. Unusual Occurrences or Events

None reported or noted in records examined

L. Independent Measurements (Van, Inspector)

*Red water sample - taken inside
windstall*

For irradiations not completely self-shielded containing:

379 Ci cobalt-60

1042 Ci iridium-192

1515 Ci cesium-137 or more, the following must be determined:

M. Control Devices

1. What control device will prevent entry of individuals into the irradiator when the source is exposed?

Door is electrically locked and can't be unlocked until source is fully shielded.

2. What control device will retract the source if an individual attempts entry?

Being anyone at the following upon entry will lower source to fully shielded position — unlocking door by door (separate interlock) disconnects air hose (which is across entry).

3. What control device prevents operation of the source if an individual is present in the irradiator?

Cable along full length of right wall of the irradiator cell can be pulled at any point and sources will go down.

4. Do any of the above control devices prevent egress from the irradiator?

No — can spring door open.

N. If the Entry Control Devices Fails:

1. What control device will retract the source?

If door lock interlock fails and door is unlocked with key, opening the door triggers and interlock which will lower the source. Beyond this, disconnecting the air hose for personnel entry drops the source.

2. Are visible and audible alarm signals generated to warn individuals entering of the hazard, and to alert another knowledgeable individual? *Bell rings when source is being moved or retracted. Blinking light indicates exposed position.*
0. If there is credible probability, the physical radiation barriers can fail: *Concrete masonry walls - Not likely* } *Normally two are working at any one time*
1. What control device will cause the source to retract?

2. Are visible and audible alarms signals generated to warn individuals entering of the hazard, and to alert another knowledgeable individual?

P. If the Source Is Stored In A Liquid Shield:

1. Is loss of liquid level adequately signaled for immediate action? *Shut valve operated red alarm on annunciator will drop the source and make operation impossible.*

Q. Exposing the Source

1. What device will automatically generate visible and audible alarm signals to alert individuals before exposing the source?

A switch at the far wall of the room is turned on. This allows 90 seconds to reize source. If not done in 90 seconds, must use switch again. During this 90 seconds, alarm sounds and yellow light on irradiator.

2. What clearly identified device can be activated from inside the irradiator which will prevent the source from becoming exposed?

Pull cable at any point along the wall

3. Is there a procedure to assure that the area is clear of individuals prior to exposing the source?

Individual who switches on alarm and alarm, must traverse entire length of cell with the checks to insure area is clear of remaining individuals and looking the door, and reize the source.

R. Physical Radiation Measurements

1. Is a physical radiation measurement made upon entry to the irradiator after source operation? *Yes and instrument is checked with check source each time entry is made.*

S. Tests of Entry Control Devices

1. Are tests of the entry control devices conducted each day prior to initial operation of the source? (Note: These tests are not required if operations are uninterruptedly continued from the previous day.) *Checks were only made once a week but not necessarily upon start up after being down on Sunday.*
2. Are records of these tests maintained? *Yes.*

T. Control of Portals Into Irradiator

1. What safety devices and administrative procedures are used to prevent entry by individuals through portals that convey materials in and out?

There is a root plug which annunciates to panel at control to down source or not allow it to be raised.

2. Are exit portals equipped to detect and signal presence of loose radiation sources and to automatically prevent them from being carried out?

U. Independent Measurements

1. Take water sample and split with licensee.

a. Licensee results

B G

b. IE:I Results

B G

2. Planchet or bottle source standard. *Not done*

a. Value

b. Licensee's results

3. Results of interlock checks

Interlock prevented door from being unlocked when checked by inspector.

4. Is water continuously circulating through demineralizer? *Yes*

5. Results of surveys around demineralizer.

0.1 mR/hr

6. Demineralized conductivity measurement *Not made*

7. Results of PH check with litmus paper *Not made*

8. Restricted area survey results with meter

*0.1 mR/hr anywhere in room irradiation.
Up to 6 mR/hr near lead covered
contaminated dry 1 basin.*

9. Restricted area survey results with wipes

10. Unrestricted area survey results

0.1 mR/hr.

11. Results of check of liquid level indicator

Alarm sounded on annunciator.