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ADDENDUM

<u>Page</u>	<u>Line</u>	<u>Correction and Reason for Correction</u>
14	2	"LARER" is actually "ALARA"
18	22	"is" should be "are"
24	24	"Julia" is "Judy"
20	16	"The way it worked" meant to be "where it was kept"

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UNITED STATES OF AMERICA

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NUCLEAR REGULATORY COMMISSION

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INCIDENT INVESTIGATION TEAM

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INTERVIEW OF HAROLD F. HEMOND

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MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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MONDAY, OCTOBER 23, 1995

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2:30 O'CLOCK P.M.

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INTERVIEWERS:

JOHN GLENN, Team Leader

THOMAS O'CONNELL

SAMI SHERBINI

P-R-O-C-E-E-D-I-N-G-S

(2:30 p.m.)

MR. GLENN: Today is October 23, 1995. The time is 2:30. This is an interview being conducted by John Glenn, who is the team leader of the Incident Investigation Team, sent to the Massachusetts Institute of Technology to investigate an uptake of P-32 by a lab worker.

Let me explain, Mr. Hemond, just a little bit about -- or, Dr. Hemond -- a little bit about the purpose of the Incident Investigation Team. We are a fact-finding group. We are not an inspection team. We're not an investigation team.

We are here to determine what happened, to develop a probable cause for the incident, and then to make findings in terms of lessons learned -- what things could MIT learn from this incident to prevent a recurrence, what things could the academic world in general learn in order to prevent this kind of incident, and, finally, what could the NRC learn in terms of its own regulatory process -- the licensing, the regulations, and so forth.

So that is the purpose. It's a relatively high level investigation by the Nuclear Regulatory Commission, because the incident has significance in terms of its nature that we feel we need to look at from that broad perspective.

1 DR. HEMOND: Is there an element of this that
2 is going to assist us in trying to find the perpetrator, if
3 there is one, figure out who did this? Because there is a
4 criminal element here.

5 MR. GLENN: There clearly is the potential for
6 a criminal element. This team will not be looking at that
7 any further. When the team was first dispatched, we did
8 have as part of our charter to develop whether we thought
9 there was probable cause that there might be a deliberate
10 act involved. Once we reached the conclusion that there
11 was sufficient information to indicate that that could be
12 the cause, we turned that information over to our Office of
13 Investigations, which has initiated an independent review
14 to determine who could have done it.

15 DR. HEMOND: So there is another NRC group that
16 would be involved in that.

17 MR. GLENN: That's right. So that effort is
18 going on, but it's not a part of the Incident Investigation
19 Team. That's not part of our --

20 DR. HEMOND: Okay. Because that's one of my
21 concerns also, and it's -- you've probably seen my letters
22 to campus police.

23 MR. GLENN: Yes.

24 DR. HEMOND: Among others. And, of course, I
25 think it's really quite essential if there is -- if there's

1 somebody that did this deliberately, they don't belong in
2 the academic community. I feel that very strongly, and so
3 that's my reason for asking if there is possibly some
4 forthcoming help with that.

5 MR. GLENN: And in our report, we will be
6 really addressing the issue from if there is a deliberate
7 act, what -- how can the academic community deal with that,
8 how can the NRC deal with that, and with specific findings
9 with respect to this particular case.

10 DR. HEMOND: Yeah. The circumstances are such
11 that there is certainly -- I think I am suspicious that
12 there is a deliberate incident here. Somebody --

13 MR. GLENN: We could explore that perhaps a
14 little further in the interview, but let me cover a few
15 preliminaries first.

16 DR. HEMOND: Okay.

17 MR. GLENN: So that I make sure we cover these.
18 One, I guess I mentioned it to you before, we are being
19 transcribed. That allows us to speak without taking notes.
20 It also gives us a clear record of what we're told and is a
21 basis for the report that the IIT will write at the end.

22 We will be writing a report in approximately 40
23 days from now, which will be presented to the Commission
24 and then published and distributed publicly.

25 DR. HEMOND: In the event that there is any

1 other documents or things that you want me to write, will I
2 be able to get a copy of the transcript also, for my own
3 purposes? Or should I be scribbling notes like --

4 MR. GLENN: No, you do not need to take notes
5 either. That is the next thing I want to tell you. The
6 transcript that we have should be available for you to
7 review tomorrow. You will be able to read your own
8 transcript and review it for, you know, is it a correct
9 representation of what was said, was what was said really a
10 correct representation of what you meant to say, and were
11 there any things that you maybe left out that you feel
12 should have been said at that point.

13 DR. REMOND: Right.

14 MR. GLENN: You can then use what we call an
15 errata sheet, refer to the line where you think that there
16 is a discrepancy or something additional that needs to be
17 added, and that will become a part of the record as well as
18 the transcript itself.

19 Now, only you will be -- and the team will be
20 allowed to review your transcript ~~until~~ after the report is
21 issued. Once the report is issued, the transcripts which
22 formed the basis for any of our findings and conclusions
23 will then be put into what we call the public document
24 room. Anyone who has an interest in seeing them at that
25 point could see them, and if you wish a copy at that time

1 you can request it and we'd give you a permanent copy. But
2 tomorrow you'll have to come in and sit at a table and
3 review it.

4 DR. HEMOND: Tomorrow?

5 MR. GLENN: If you want to.

6 DR. HEMOND: I hope I get a -- my schedule is
7 just crazy, as you probably understand. I've canceled
8 things to get here right now, so --

9 MR. GLENN: Yes.

10 DR. HEMOND: -- tomorrow is no better.

11 MR. GLENN: Okay.

12 DR. HEMOND: I might have a little more time
13 on --

14 MR. GLENN: So maybe Wednesday morning or
15 something like that will -- if not, we can make
16 arrangements to --

17 DR. HEMOND: Okay.

18 MR. GLENN: -- somehow to allow you to have a
19 chance to review the transcript.

20 DR. HEMOND: Okay.

21 MR. GLENN: If it means we have to send someone
22 up with the transcripts and arrange for people to have a
23 day the end of this week or next week, we'll be glad to do
24 that.

25 DR. HEMOND: Okay.

1 MR. GLENN: But the important thing is you get
2 to see it; you can have a copy when we're through. No one
3 else will get to see it except the team until the report
4 has been issued. But at that point, it becomes pretty much
5 public knowledge.

6 If there is something in there that you
7 determine is proprietary or privacy material, you would
8 need to identify that to us, so we can determine whether it
9 could be withheld from the public.

10 Okay. I'd like to make sure we get all of the
11 introductions properly on the record at this point. I'm
12 John Glenn. I'm with the Nuclear Regulatory Commission.
13 My normal function is to work in the Office of Research,
14 which is responsible for developing rules and regulations
15 at the NRC, and I am the leader of the team.

16 And, Sami, could you --

17 MR. SHERBINI: Sami Sherbini with the Nuclear
18 Regulatory Commission.

19 MR. GLENN: Tom?

20 MR. O'CONNELL: Thomas O'Connell. I'm with the
21 Massachusetts Department of Public Health, Radiation
22 Control Program.

23 MR. GLENN: And, Harry, if you could say your
24 name and your responsibilities at the university, and then
25 your responsibilities with respect to radiation protection.

1 DR. HEMOND: Yeah. I am Harry Hemond. I am
2 Professor of Civil and Environmental Engineering. As such,
3 my duties are teaching, research, administration. I'm also
4 currently Director of the Ralph Parsons Laboratory, and I
5 am at present a member and chair of the Institute's
6 Radiation Protection Committee.

7 MR. GLENN: To begin things, I wonder if you
8 could just give us a brief narrative, in terms of when you
9 first learned of the incident and the information that you
10 have as the information continued to come in about this
11 exposure.

12 DR. HEMOND: Okay. I don't recall dates just
13 off the top of my head, so I'm looking back to the agenda
14 of our September 12 meeting of the Radiation Protection
15 Committee. And I had heard just a word or two anecdotally
16 that there was an incident that would be brought up, but it
17 was just a day or two before the committee meeting. So I
18 didn't pursue it in depth at that time, since we were
19 meeting very, very shortly.

20 And it was at this meeting that Frank Masse
21 gave us a fairly detailed description of the incident, and,
22 in particular, of how his -- how he and his staff had been
23 talking in terms of attempting to identify the -- in
24 particular, the amount of material that this individual
25 ingested and what he could learn about when and, of course,

1 some thoughts, some speculation at least, as to the
2 possible mode of ingestion. And so that was when -- that
3 meeting was the 12th of -- it was the 12th of September,
4 yeah.

5 MR. GLENN: Did the committee come to any
6 conclusions at that time in terms of either the magnitude
7 of the incident, or probable cause of the --

8 DR. FEMOND: Well, I don't think we had -- and
9 I still don't think we have enough data to be certain
10 exactly how this individual ingested the P-32, although the
11 circumstances I think gave rise, in my mind, to a great
12 deal of suspicion that this was not purely accident. It
13 was probably deliberate by somebody's action. I don't know
14 whose.

15 I think -- I would say the rest of the
16 committee generally was of that view also. This is not
17 something that we took lightly. I was quite upset that
18 somebody would do this. In my view, this is an incident --
19 in my personal opinion, it was -- if it was done by another
20 individual deliberately to the person who was exposed, then
21 it was an assault just as much as if they had beat him up
22 out in the parking lot. And my view is we cannot tolerate
23 that at the institute, and so I think everybody there
24 regarded it similarly.

25 MR. GLENN: Did the committee have any feelings

1 or make any recommendations to the Radiation Protection
2 Office in terms of what actions you might take, in terms of
3 the radiation protection program, to either prevent or at
4 least detect early on any kind of incident like this?

5 DR. HEMOND: I think our main concerns were, of
6 course, to make sure that the individual exposed had
7 received as -- whatever attention was warranted -- medical,
8 health physics, etcetera. That, of course, was the first
9 concern, to make sure that we have done what we can for
10 that fellow.

I think the next concern is to get facts, and
-- what really did happen, you know. I don't think
11 that we actually discussed changes in the program, because
12 there are still a lot of facts outstanding. And I believe
13 -- and I don't recall whether -- exactly what I said to the
14 committee, other than got people's consensus that I would
15 also write a letter indicating, from the committee's
16 standpoint, that we felt this should be pursued vigorously
17 by the campus detectives to find out if, in fact, there is
18 a criminal action that has occurred here.

19 MR. GLENN: And so you did write a letter to
20 the campus police asking them to do an investigation?

21 DR. HEMOND: Well, yeah. They had already been
22 contacted, of course, and I, just to reinforce this, wrote
23 a letter to Ann Glavin, which I believe you have on file.

1 MR. GLENN: Yes.

2 DR. HEMOND: I also spoke with the detective
3 who has been assigned to the case. His name is Dave, and I
4 -- do you recall his last name? Perhaps he was --

5 MR. GLENN: Does McCoy sound right?

6 DR. HEMOND: McCoy. That's it. Dave McCoy.
7 And I actually, before sending a letter, I had a chat by
8 phone with Dave McCoy, essentially to the same end, and it
9 was my view that -- that even though an investigation
10 meant, you know, interviewing people and so forth, I
11 thought that one should do this sooner rather than later.
12 You don't want to wait until next year, because memories
13 turn cold and evidence is harder to track down.

14 So I'm not a detective, but it makes sense
15 that, you know, that this should be pursued in a timely
16 way, and I think Dave essentially agreed with me. And I
17 also felt that it not only should -- if there is an act of
18 wrongdoing, not only should the facts be identified, but
19 personally I feel it is a salutary thing to let people know
20 that we don't just look the other way when this sort of
21 thing goes on. That, okay, so it's going to be some cost
22 to interview all of the people and have a detective come
23 and spend time in the lab.

24 But, I mean, you know, there is a message
25 there, too.

1 MR. GLENN: Now, did your recommendation -- was
2 that made known to university administration? Did the
3 police have any duty to report back to you? I guess, what
4 would be the next step after your letter written, you know,
5 encouraging a prompt and thorough investigation? Would you
6 expect that the committee is going to get a report?

7 DR. HEMOND: I would expect we would hear of
8 the status of things, yes.

9 MR. GLENN: In terms of the committee's role in
10 the radiation protection program, you, as chairman, could
11 you briefly describe to us what your understanding of the
12 role of the Radiation Protection Committee is?

13 DR. HEMOND: Well, the committee is -- of
14 course, there are several members who are from the
15 Radiation Protection Office staff, who do the day-to-day
16 work of the committee and also provide the -- by and large,
17 the technical expertise. The faculty members, people like
18 myself, are not necessarily people who are trained in
19 health physics.

20 We are, by and large, people who have some
21 familiarity, from the standpoint of people who use
22 radionuclides in our research in one way or another, and
23 obviously have an interest in the area. And what we
24 largely do is to, in large part, oversee the smooth
25 functioning of the program.

1 And if there were deficiencies that came --
2 that we, from our perspective, saw in the program, we would
3 bring this up as items in our regular meetings. And, of
4 course, if there were any major unresolved problem that
5 called for involving higher levels of administration, we
6 would do that, too.

7 But we are largely reviewers and overseers of
8 the program. We're the faculty representatives.

9 MR. GLENN: Okay. Maybe if we can get just a
10 little more detail. You mentioned oversight and review.
11 Could you briefly describe for us how oversight --
12 functionally, how the committee exercises oversight? Now,
13 I assume that's oversight of the activities of the
14 Radiation Protection Office.

15 DR. HEMOND: That's right. And at a typical
16 meeting, if you look, for example, at an agenda, you can
17 see basically what we do. The meeting usually -- well,
18 inevitably -- starts off with a reading of the previous
19 minutes, and acceptance of them, with or without
20 corrections, and then we ratify those authorizations for
21 radionuclide usage that can be administratively approved --
22 renewals, new authorizations, and amendments.

23 Then, in a separate agenda item, we will --
24 actually, we have to approve certain authorizations that go
25 beyond what can be administratively approved by the RPO,

1 and then there are a number -- typically, a number of
2 reports -- the LARER report, the SNM report, analytical X-
3 ray program and laser safety program -- are typical items,
4 such as we did at our September 12th meeting. And then any
5 new business.

6 At this particular meeting, obviously, this
7 incident was an item of new business. But other items of
8 business come up that fall outside of these routine items,
9 and these are a way for us to know what's going on and have
10 input into any unusual or non-routine situations that come
11 up. And so our mode of interaction is most of the time
12 through these regular meetings.

13 MR. GLENN: Okay. You mentioned the approval,
14 I guess, of proposed uses of radioisotopes.

15 DR. HEMOND: That's right.

16 MR. GLENN: What is the role of the committee
17 with respect to that?

18 DR. HEMOND: The -- the -- for those that
19 exceed the guidelines for administrative approval, the ones
20 that are for higher -- large possession levels, for
21 example, the applications are copied and distributed to
22 everybody on the committee. And we read them and we vote
23 on them, or give feedback. Sometimes we will approve
24 something saying, "This is fine, but we recommend this or
25 that be changed."

1 Occasionally, there will be something that
2 somebody will pick up and they will want to do it a little
3 differently. Sometimes there are administrative things
4 like, oh, so-and-so -- he is over at the -- you know, maybe
5 he is working at RLE, but he -- really, isn't he a member
6 of the Physics Department? And shouldn't this be a Physics
7 Department authorization? So administrative things, other
8 things may be -- there may be technical issues.

9 For example, I remember one in which there was
10 a -- something over in the engine testing facility, and
11 they were looking at oil consumption using tritiated oil,
12 as I recall. And somebody said, "Gee, you know, this looks
13 okay, excepting we don't have a provision. How do we get
14 -- are we going to check that this engine, at the end of
15 this work, is decontaminated or disposed properly?" People
16 do look at them and attempt to find if there are any
17 technical deficiencies.

18 MR. GLENN: Okay. With respect to the
19 oversight role, is there any kind of sort of independent
20 check of the Radiation Protection Office -- an audit or
21 something of that nature -- done periodically by the
22 Radiation Safety Committee?

23 DR. HEMOND: We don't go in and do a year-to-
24 year or month-to-month audit. We -- I think we certainly
25 form our judgment as to how things are going, and a lot of

1 know people like Mitch and Frank and Don and Judy
2 personally. I think if there were some irregularity, we
3 had reason to -- we had reason to be concerned about the
4 way something was going that couldn't be resolved in the
5 meeting. I wouldn't put that out of the realm of
6 possibility.

7 I would say that, by and large, my impression
8 -- and I think that's true of most of the faculty -- we've
9 got really quite a professional group of people in the RPO.
10 So we rely on -- we do not -- I do not go in as an RPC
11 member and attempt to open their file drawers and go
12 through records. No, I don't do that.

13 MR. GLENN: And there is no formal review
14 process, such as an annual management audit or something of
15 that nature?

16 DR. HEMOND: That we as members do, no.

17 MR. GLENN: Yeah.

18 DR. HEMOND: I don't -- no, we do not.

19 MR. GLENN: Is there maybe an outside
20 independent review that is done? Do you know whether there
21 is anything like that done?

22 DR. HEMOND: Well, I know there are NRC
23 inspections.

24 MR. GLENN: Okay. But you don't know of
25 anything that the university itself --

1 DR. HEMOND: That the NRC does with respect to
2 the radiation protection program.

3 MR. GLENN: Yeah.

4 DR. HEMOND: That is independent of RPO and
5 independent of NRC. Is there a third body that comes in?

6 MR. GLENN: Yeah.

7 DR. HEMOND: Well, not that I'm aware of.

8 MR. GLENN: Okay. In this particular incident,
9 we're looking particularly in terms of security and
10 material accountability, you know, in terms of possible
11 causes for the incident, and I wonder if you could tell us
12 a little bit about what your expectations would be for
13 security of laboratories where radioactive material is used
14 and stored, and how the accountability for that material is
15 transferred from the principal investigator down to the
16 individuals within the laboratory who actually handle the
17 material.

18 DR. HEMOND: Well, that's largely the principal
19 investigator's responsibility. Our authorization is to a
20 principal investigator, and different principal
21 investigators have different styles. And I'm sure you've
22 known a lot of academicians and they range all the way from
23 the guy who -- who manages to spend half the day in his own
24 laboratory working shoulder to shoulder with his students,
25 to the guy that runs a group of 30 or 40 people and has two

1 level of post-docs to administer things. So it's pretty
2 hard to generalize how somebody is going to actually run
3 their own laboratory.

4 MR. GLENN: With respect to the --

5 DR. HEMOND: I mean, the responsibility is
6 clear.

7 MR. GLENN: Yes.

8 DR. HEMOND: But how you actually do it is --
9 there is certainly room for different styles.

10 MR. GLENN: For you as Chairman of the
11 committee, and as a user of isotopes, what would your
12 expectations be with respect to somebody being able to,
13 say, enter a building during off-hours and actually get
14 into an area where materials are stored? What would be
15 your expectation about what would prevent that from
16 happening?

17 DR. HEMOND: Well, normally, the buildings at
18 MIT are locked after hours. That's certainly the case in
19 the Parsons Laboratory, and so normally I would expect
20 people would not be able to get in randomly. There are
21 other barriers. If you look around Parsons Laboratory,
22 there is usually people in the lab working. So you also
23 have just some measure of informal vigilance, just by the
24 fact that people in the laboratory get to know one another
25 also.

1 MR. GLENN: Do you think they would actually
2 challenge a stranger?

3 DR. HEMOND: Yeah, we've had strangers
4 challenged in our building. We had an incident just the
5 other day where a stranger was challenged and, in fact, was
6 escorted out of the room. It turned out later somebody
7 found a boom box in a shopping bag underneath the sink in
8 the men's room, and it was just ready to be picked up at a
9 later time. In this case, the incident was to not walk off
10 with P-32 but boom boxes, other things like that. That's
11 the normal problem.

12 MR. GLENN: And would you expect that the
13 laboratory doors would normally be locked to laboratories
14 where radioactive material was stored?

15 DR. HEMOND: I think it would depend upon the
16 nature of the material and the nature of the laboratory,
17 how secure the general area is, how populated it is, what
18 kind of nuclides are there. I mean, if somebody has a
19 smoke detector on their bench, for which -- if you're going
20 to take a source out of a smoke detector, it becomes a
21 licensable item. I don't necessarily think that we would
22 keep a smoke detector under lock and key.

23 On the other hand, there are some things like
24 these gamma cell irradiators, where obviously if somebody
25 bent on doing mischief got hold of 1,000 curies of Cobalt-

1 60, and those things require a high level of security, I
2 think one has to use a measure of judgment.

3 MR. GLENN: I don't know -- in you lab, do you
4 mainly work with single sources?

5 DR. HEMOND: I actually use -- I'm a
6 geochemist, and most of my work is with things -- I use a
7 few sealed sources for calibrating an alpha and gamma
8 spectrometer, microcurie size sources. And we do, in fact,
9 have a lock on the drawer where they're kept. And we use a
10 little bit of Polonium-209, a few DPM in a bottle. You
11 know, this is basically natural levels.

12 MR. GLENN: Yeah.

13 DR. HEMOND: So do I keep it under lock and
14 key? Well, sealed sources are under lock and key. The
15 Polonium-209, somebody could probably get a few DPM of
16 Polonium-209 out of my lab if they knew the way it worked,
17 which they probably wouldn't, but if they did they could
18 get it.

19 MR. GLENN: Okay. Now, the question I was
20 trying to pose is if you had, say, millicurie quantities of
21 an isotope that was in a liquid solution, such as P-32.
22 Would you expect, in your own laboratory, that if you're
23 the principal investigator, and you have delegated to other
24 people to use the material, that there would be some kind
25 of logging out system so that as the material is removed

1 from the stock that you know who took it, and they're then
2 responsible for accounting for its use or disposal?

3 DR. HEMOND: If I were using things like
4 millicurie amounts of P-32?

5 MR. GLENN: Right.

6 DR. HEMOND: Yeah, I would want some sort of a
7 system for keeping track of that. I think that's really a
8 requirement. In any event, the investigator needs to put
9 it in force.

10 MR. GLENN: With respect to your role as
11 Chairman in the committee, is there any sort of delegation
12 to the committee or any sort of rules and procedures -- is
13 there a handbook for you when you became Chairman, to know
14 what your responsibilities were and how the committee was
15 to function?

16 DR. HEMOND: Well, I was on the committee for
17 several years before I was named as chair, so I think I --
18 most of my views on the function and role of the committee
19 were formed by sitting on the committee, I think since I
20 was an Assistant Professor -- long, long term of --

21 MR. GLENN: Yeah. I'm particularly interested
22 in that, in case there is a document that we would want to
23 copy of the document, so that that can become a part of the
24 record. But it sounds like there is probably nothing --

25 DR. HEMOND: No, there is an Institute

1 definition of the Committee on Radiation Protection.

2 MR. GLENN: Oh, okay.

3 DR. HEMOND: And I am not sure I have a copy on
4 me, but I'm sure that --

5 MR. GLENN: If we requested that of Radiation
6 Protection --

7 DR. HEMOND: -- I'm sure they can find it.
8 There is a committee on committees, basically, and they
9 actually send around each year, you know, your first and
10 second choice of Institute committees. And there is a
11 little blurb that, okay, says what the RPC is.

12 MR. GLENN: Okay. Sami, do you have some
13 questions?

14 MR. SHERBINI: Just one question regarding the
15 duties of the committee. I understand the idea of the
16 principal investigator being in charge of his lab or her
17 lab. Is there a requirement, either on the part of the
18 committee or the Radiation Protection Office to ensure that
19 this investigator is meeting his obligation as you
20 currently -- the conditions of transfer of responsibility
21 for the radioactive materials? With respect to Dr. Glenn's
22 question of auditing.

23 DR. HEMOND: Yes. Well, the answer is yes. I
24 -- even while I have been Chairman, I can recall at least
25 one incident where we, as "we" meaning the Radiation

1 Protection Committee composed of faculty members, wished to
2 send a message to a principal investigator that they needed
3 to clean up their act in one respect or another, probably
4 -- I forget the details, but incidents having to do with
5 the proper usage of radioisotopes, and the violations may
6 have been in terms of accounting or perhaps in sloppy use
7 in the lab, or something.

8 But I -- I have actually been involved in
9 writing letters, or at least in one case a letter to a
10 researcher saying, "You know, you've got to clean up your
11 act, or you'll be turned off." And this is an example of
12 where it's useful to have faculty members on the committee.
13 The reason being -- obviously, this is in an academic
14 environment. You've got some big shot PI who may wish to
15 brush aside what -- administrative people. This is rare,
16 but it can happen. And if that happens, it is really
17 useful to have a panel of peers saying, "Look, guy, you
18 know, straighten out your act."

19 So we very definitely do play that role of
20 requiring accountability, and normally -- and I will say
21 this -- the Radiation Protection Office staff, in my view,
22 are really quite a competent and conscientious group of
23 people. And by and large, if they sense there is a
24 problem, they will try to straighten it out, and most of
25 the time -- 99 percent of the time -- the faculty or other

1 principal investigator will cooperate.

2 But if there's a problem, if it's a continuing
3 problem, and some extra clout is needed, that is one of the
4 things we do in our oversight capacity. We say -- and then
5 the letter is coming from a committee of professors to
6 another professor, making it very clear that this is --
7 that there is an issue that is serious and something has to
8 be rectified.

9 MR. GLENN: Had you had to write any of these
10 letters to Professor Tonegawa's laboratory?

11 DR. HEMOND: I'm trying to recall. I --
12 without looking back to my file, I would -- I can only
13 speak to having written one or two such letters since I
14 have been Chairman, and I can recall it happening in the
15 past. Names and dates I can't give you right now. But in
16 terms of answering your question, do we play an -- that
17 sort of role, the answer in my view is yes.

18 MR. SHERBINI: Well, as a followup to that, how
19 would this kind of information become known and get to the
20 committee? There has been no formal audit requirements,
21 and how would the Radiation Protection Office get to know
22 that this investigator is not doing --

23 DR. HEMOND: Through the RPO staff. In other
24 words, if Mitch Galanek, or Julie, or somebody, says,
25 "Look, you know, there is -- I found these sorts of

1 problems in this laboratory, and I have tried to work with
2 them but haven't gotten anywhere. I think it's time to use
3 -- to use more clout, actually."

4 MR. SHERBINI: So the staff would look over --
5 would go to the labs and look around? Is that what --

6 DR. HEMOND: The RPO staff is the vehicle, the
7 people who are employed to spend full-time doing this sort
8 of thing. That is, by and large, the vehicle by which we
9 would find out about that.

10 MR. O'CONNELL: So if the RPO staff felt that
11 it was necessary to go to that next level, then they would
12 bring that to the --

13 DR. HEMOND: Absolutely. Absolutely.

14 MR. O'CONNELL: Okay. So it's almost -- it's a
15 judgment call on their part, or is there a certain set of
16 guidelines that they have to adhere to before they bring it
17 to your attention?

18 DR. HEMOND: Well, they would make a reasonable
19 judgment. For example, if they were inspecting a
20 laboratory and they found that somebody had left a coffee
21 cup over near the door, inside the door, they wouldn't
22 bring it to the committee.

23 But if they found that a certain laboratory was
24 routinely being less than clean and diligent about the way
25 that they accounted for or maintained cleanliness in their

1 area, and they had spoken to the PI a couple of times and
2 gotten nowhere, and got to the point where they felt that
3 some threat -- well, not threat, but, you know -- I guess
4 it is a threat when you're talking about possibly shutting
5 off somebody's access to nuclides.

6 At the point where they felt they had to begin
7 to be enforcers rather than advisers, as it shifted that
8 way, that is where they would -- if they felt we could be
9 helpful, they would bring this to the committee.

10 MR. O'CONNELL: I have one other question.

11 DR. HEMOND: Sure.

12 MR. O'CONNELL: The Radiation Protection
13 Committee meets approximately how many times a year?

14 DR. HEMOND: Quarterly.

15 MR. O'CONNELL: Quarterly?

16 DR. HEMOND: That's right.

17 MR. O'CONNELL: Are there any times that the
18 committee would have a special meeting? Are there any
19 circumstances where you'd have one of -- you would call a
20 meeting that would not be regularly scheduled?

21 DR. HEMOND: Sure, we could. If it -- there
22 are two situations. If this particular incident had not
23 been so close to a regular meeting, it's the sort of thing
24 where we -- I might well have called a meeting. We also
25 can call a meeting if there are, for example, requests for

1 authorizations that need to be -- need the direct approval
2 of the committee. We could call a special meeting. We can
3 also do a mail ballot type of thing, which is a sort of
4 meeting, but it is not a face-to-face meeting. And that
5 happens, certainly, from time to time.

6 There is nothing that prevents more than a
7 quarterly meeting. I will say that to get everybody
8 together, given that you're dealing with faculty who are
9 usually spread horrendously thin, it is -- normally, you
10 need a little lead time.

11 MR. GLENN: Let me follow up a little bit on
12 Sami's questions. In terms of dispersal of information,
13 and I guess the NRC has tried to develop various ways of
14 communicating with licensees. But when we become aware of
15 a situation where it might, you know, be relevant to other
16 licensees that are --

17 DR. HEMOND: Right.

18 MR. GLENN: -- bulletins of information
19 notices, and that sort of thing -- does the committee,
20 through the Radiation Protection Office, have any way to
21 get out a general alert that, hey, this is the practice we
22 observed here. It had this consequence. Each laboratory
23 should look at its own procedures to see whether it could
24 deal with this --

25 DR. HEMOND: Oh, sure. We -- mailings to the

1 various PIs, so absolutely.

2 MR. GLENN: How often does that happen, do you
3 think?

4 DR. HEMOND: I'm not sure I could give you a
5 number of times. But I've seen -- it does happen from time
6 to time.

7 MR. GLENN: Now, is that just -- have there
8 been other contamination incidents that you can remember?
9 Anything with internal contamination, I guess as opposed to
10 external contamination?

11 DR. HEMOND: This is the first I can recall
12 where there was a sense that there was actually a
13 possibility of deliberate contamination. I don't recall
14 something that had this suspicion about it in the past.

15 MR. SHERBINI: I guess I don't want to belabor
16 the point too much. But we've looked at the requirements
17 on the day-to-day operations of the Radiation Protection
18 Office. And as far as I can recall, one of the
19 requirements is that the Commission will go out and do
20 surveys that the committee specified.

21 DR. HEMOND: I'm sorry. Can you -- I didn't --

22 MR. SHERBINI: They are required to do surveys
23 at specified frequencies.

24 DR. HEMOND: The RPO.

25 MR. SHERBINI: Yeah.

1 DR. HEMOND: Radiation Protection Office.

2 MR. SHERBINI: I don't recall seeing any
3 requirement other than that, in terms of making sure that
4 certain other things are being conducted, like making sure
5 that proper accountability of materials is being conducted,
6 that proper security is being conducted, you know, all of
7 the other things that would normally be found either as a
8 license condition or as a condition for citation of use.

9 Did I miss something, or are you aware of any
10 formal requirement to do that on a periodic basis, why any
11 of the staff in the Radiation Protection Office would --

12 DR. HEMOND: The Radiation --

13 MR. SHERBINI: -- whether, in fact, it's up to
14 them to decide what -- inspect what --

15 DR. HEMOND: In terms of the statutes that
16 govern the frequency of inspection, I --

17 MR. SHERBINI: Well, in terms of -- what I'm
18 searching, I guess, is -- is there a mechanism that would
19 require the RPO staff to say or to periodically ensure that
20 the conditions under which the authorizations use material
21 were gotten, are, in fact, being implemented. In other
22 words, something more than just an impression or a walk
23 around a campus. Something would form --

24 DR. HEMOND: Well, they do annual retraining
25 when we renew an authorization. And very often when an

1 authorization is being considered, whether it has been
2 administratively approved, or whether it is one that we
3 have to approve as a committee, typically, there will be
4 one of the RPO officers' staff who has prepared this.

5 In other words, the PI will submit the -- will
6 submit the authorization request. It will be reviewed by
7 somebody from RPO. And, typically, they will -- whoever
8 was the responsible person who basically prepared it from
9 the RPO end will sign it. And when we're considering it,
10 they will say, as we meet, "You know, I was up there, and
11 there were no problems," or "I've been talking with them."

12 So it is a regular occurrence that whoever the
13 staff person is will not only just handle the paperwork,
14 but very often they will have been to a laboratory and --
15 and taken a look around.

16 MR. SHERBINI: And this is an annual thing, or
17 once every two years?

18 DR. HEMOND: Renewals, I believe, are every two
19 years. And so very often they will have personally been
20 there, not just spoken with the person and done the
21 retraining, but even been to the lab. And, of course, the
22 more -- the more the activity, and the more inherently
23 problematic the isotope might be, the more they will do
24 that.

25 MR. SHERBINI: Okay. Thank you.

1 MR. GLENN: Is there anything else that we
2 haven't brought up that you can think of that we probably
3 should have asked about?

4 DR. HEMOND: Not really. I've mentioned --
5 expressed my concern at the beginning that, I mean, there
6 is two dimensions to this, and the criminal one is a very
7 real one. I think it is right to see if there are -- if
8 there are other things that could reasonably be done that
9 would forestall things like this. But there is the
10 criminal dimension, and ultimately, unfortunately, in an
11 open society, almost anything, if somebody wants to, they
12 can screw it up.

13 You want to put a lot of barriers against them
14 doing it, but I also do feel that if somebody has violated
15 the laws in a case like this, they should be found, if at
16 all possible. And, personally, I would have real concern
17 about somebody -- maybe I hold the scientific community to
18 an even higher standard than the general public. I don't
19 know.

20 But certainly, I think integrity is crucial in
21 academia, and so I think that -- I very much hope that the
22 second part of this, which is to find the perpetrator, is
23 pursued. And as I -- I've already said that, but it sounds
24 like you folks are generally in agreement.

25 MR. GLENN: I guess one thing we're exploring,

1 of course, one deterrent is for people to know they will
2 get caught. We are also I think in our questions trying to
3 explore other things that could be done up front that will
4 convince people of the likelihood of their being detected
5 and caught, and that that would also deter it.

6 Is there anyone you would recommend we talk to?
7 We've talked to the people who are principally involved.
8 We're talked with the Radiation Protection Office. We've
9 talked with you and some other members of the Radiation
10 Protection Committee. Can you think of anybody that we
11 might have missed?

12 DR. HEMOND: You've talked with all of the
13 folks in the Radiation Protection Office, the whole staff?

14 MR. GLENN: Not the whole staff, but those who
15 had any role to play in terms of the evaluation or the
16 response to the incident.

17 DR. HEMOND: Okay. And you've spoken with
18 campus police?

19 MR. GLENN: Yes.

20 DR. HEMOND: Okay. I think those are the key
21 people.

22 MR. GLENN: Okay.

23 DR. HEMOND: The -- if I think of somebody that
24 you might have skipped over that I -- that really should be
25 spoken with, I'll let you know. But --

1 MR. GLENN: Okay. We may --

2 DR. HEMOND: -- you've covered the obvious
3 bases here.

4 MR. GLENN: I'm going to hand you here a list
5 of the -- what you can do with respect to the review and
6 the availability of the transcripts. We discussed that at
7 the beginning. This puts it in writing, so that you can
8 refer back to it. I've put a telephone number up there at
9 MIT that we can be reached at to schedule this.

10 If you're not able to review it while we're
11 still here, you can contact Mitch, and I think we'll leave
12 a contact number there. And then, as I mentioned at the
13 beginning, if necessary we can send somebody up with
14 transcripts.

15 DR. HEMOND: Are you folks actually going to
16 convert this into printed copy?

17 MR. GLENN: Yes.

18 DR. HEMOND: By tomorrow?

19 MR. GLENN: By tomorrow.

20 DR. HEMOND: That's pretty good. That's fast.
21 Okay.

22 MR. GLENN: Okay. With that, I think the
23 interview is concluded. The time is about 3:17.

24 (Whereupon, at 3:17 p.m., the interview was
25 concluded.)

C E R T I F I C A T E

This is to certify that the attached proceedings before the United States Nuclear Regulatory Commission in the matter of:

Name of Proceeding: INTERVIEW WITH HAROLD F. HEMOND

Docket Number: --

Place of Proceeding: Cambridge, Massachusetts

were held as herein appears, and that this is the original transcript thereof for the file of the United States Nuclear Regulatory Commission taken by me and, thereafter reduced to typewriting by me or under the direction of the court reporting company, and that the transcript is a true and accurate record of the foregoing proceedings.

S. Dildine
Official Reporter
Neal R. Gross and Co., Inc.