UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

In the Matter of:

IE TMI INVESTIGATION INTERVIEW

of

Sydney W. Porter, Jr.
Porter-Gertz Consultants, Inc.

Trailer #203
NRC Investigation Site
TMI Nuclear Power Plant
Middletown, Pennsylvania

May 24, 1979
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NRC PERSONNEL:

Thomas H. Essig

Gregory P. Yuhas

Owen C. Shackleton

800 071

SHACKLETON: This is Owen C. Shackleton speaking. The time is now 11:47 a.m. Eastern Daylight Time, May 24, 1979. This is an interview of Mr. Sydney W. Porter, Jr. Mr. Porter is the owner and chief executive of the firm known as Porter-Gertz Consultants, Incorporated, headquarters at Ardmore, PA. Present to conduct this interview from the U. S. Nuclear Regulatory Commission is Mr. Thomas H. Essig. Mr. Essig is a Chief, Environmental and Special Project Section, Region III, also present is Mr. Gregory P. Yuhas. Mr. Yuhas is a Radiation Specialist assigned to Region I. My name is Owen C. Shackleton. I am an Investigator assigned to Region V. Mr. Porter has been interviewed by the NRC Investigative Team on two prior occasions, on April 24, 1979 and April 26, 1979, at that time Mr. Porter was presented on initial interview on the 24th of April a two-page document to you which advised you of your rights and the scope and purpose of this investigation and that you had a right to refuse to be interviewed and did not have to furnish anything to the U. S. Nuclear Regulatory Commission in writing. I wish to make it clear that the circumstances set forth in that document still prevail and it also identify that you have the right to have someone present of your choice at this interview and you have chosen to have present Mr. Behrle from the Metropolitan Edison Company. Do you understand Mr. Porter that these conditions still prevail?

PORTER: Yes I do.

SHACKLETON: Do we have your permission to tape this interview?

PORTER: Yes you do.

SHACKLETON: And would you like a copy of the tape?

PORTER: Yes, as well as a copy of the earlier ones that was promised.

SHACKLETON: Alright sir, we'll provide those to you at the close of the interview and now I will turn the interview over to the interviewing team, beginning, the first speaker would be Mr. Yuhas.

YUHAS: Mr. Porter as a result of reviewing your transcripts of your previous tapes, I learned that part of your responsibility as assigned by Mr. Herbein was to assist in the in-plant Health Physics program. Is that correct?

PORTER: Yes, this was an overview kind of assistance that was given very early in the game before there were many more health physicist that were available for work in that program.

YUHAS: Can you describe to us specifically how you accomplished this assignment?

PORTER: Well first of all can we talk about what time periods are involved, because the job change with time?

YUHAS: The time period involvement as far as I'm concerned for in-plant Health Physics is from your arrival onsite to midnight Friday, 3/30/79.

PORTER: Okay, so this is 3/28 to 3/30?

YUHAS: That's correct.

PORTER: Let me see now, that was what, seven weeks ago, I have to think back on this now. This has been some time since those dates have come and gone. Now you say in-plant Health Physics, is that correct?

YUHAS: That's correct?

PORTER: Well one of the first things that I did was to make sure that we had a whole body counter available for counting people, by contacting on the 28th of March, Radiation Management Corp. and telling them that even though they have a whole body counter onsite that there was nobody here to operate it and no keys to move it, it was downwind of the plume

and it had to be moved, offsite so it could be used, so that it could be utilized. Also, concurrently with this I notified them that I needed their mobile van set up with a lifting and drifting Ge(Li) detector, with the associate electronics and computer equipment and that I needed this man around the clock once it was set up, calibrated and I needed this immediately because of the fact that the noble gasses where so high in the Unit 1 counting laboratory that the TMI Unit 1 Ge(Li) system unusable where it was located. Concurrently with this I made a mental note that as soon as we could get the people together I wanted to move the Unit 1 Ge(Li) detector out of the station buildings and put it somewhere that would be close enough so that the plant HP chemistry group yet it would be less influenced by the large amounts of noble gasses that existed. These are the, all these things obviously ran through my mind immediately when I came onsite early that evening or late that afternoon and so I set about making the initial contacts to get these things accomplished. I also talked to several people about getting more Ge(Li) detectors onboard. I also found out that the NRC was sending down their van, I just asked, this is all verbal by the way. I also asked, there was half a dozen NRC people in the Watch Engineering office there off the Unit 1 Control Room and I said is your system coming down and then here they stated that it was down or it was on its way, I don't remember at this point which it was, but it was one or the other so that point was taking care of too. I also talked to Maggie Reilly over the telephone I said Maggie we have a number of air

samples here that I think we might have some false/positive on, not many a few, false/positive air samples that were in the environment as a matter of fact, not ones inhouse and that I wanted to have those checked and if we did not, in a reasonable amount of time get these other Ge(Li) systems up and running, I wanted to know if on a limited basis we could use their Ge(Li) system just to count certain important samples that I thought needed to be counted right away. This, its hard to separate inhouse and outhouse samples, in other words, we needed both counted in order to completely assess the situation and to reverify the data that we already have. We were using SAM-2 both inhouse and outhouse at that point and we were having troubles with resolving times, high dead times, so to speak because of all the noble gasses involved and the use of those. So I knew that any positive iodines that we had on charcoal that were evaluated by SAM-2 were suspect and had to be recounted on a Ge(Li) system, so I put out the word right away that in the field that we just shouldn't use them at all and that if we were going to use them in the plant we had to try to find a low background place which was hard to come by, in order to use those and this word was put out very early in the game that the SAM-2 were suspect because of the high dead time problems we had because of the noble gasses. That is suspect for evaluating iodine on charcoal.

YUHAS: Before we get too far down let me ask you to try to be more specific about the time of the day which you contacted RMC corporation.

PORTER: Ah boy.

YUHAS: Do you remember when you arrived onsite when you came ..?

PORTER: Yeah I remember, I arrived onsite in the neighborhood of ah boy, we are going to have to look it up, my earlier testimony somebody asked me that and that was back in April and I remember that a lot better then than now. But I remember arriving onsite in the neighborhood of about 7:00 in the evening 7 to 8 p.m. it seems to me about the general time frame that I arrived, and one of the first things I did when I saw it was to make a quick call to RMC then I called them again, I remember their calling me in the morning about 6 or 7 a.m. calling back again in the morning and giving me times when the Ge(Li) counter would be here and when they would move the whole body counter.

YUHAS: You called RMC after hours, did you call Roger Linnemenn directly?

PORTER: No I didn't, I tried to but he was in Europe so therefore I wasn't able to talk to him and so when he was in Europe I think, as, the problem is your really asking me for times and I cannot accurately give them to you ..

YUHAS: At this point I'm just asking you do you remember who you talked to?

PORTER: Well I remember leaving some messages early on because I couldn't get a hold of Linnemenn and asking somebody to call be back. Now seems to me vaguely that sombody call me back and we talked very briefly or maybe they called and talked to someone else, in other words, I'm trying to think what happen there. There was just a lot going on in those early moments and the first thing I remember clearly, I remember being satisfy that they had gotten a message that they had to do these things. And the first contact that I actually remember was Fred Rocko and Jim Brune calling me early in the morning 6 a.m. maybe something like that, 7 a.m. in the morning of the 29th and I remember rattling cages about the fact, that hey, I need that whole body counter, I want that counter here just to back up what were doing here, even so I didn't have any specific knowledge, I know which I talked to the aux operators what they had done on Saturday night and I did not suspect any great internal body burdens, and the fact that we didn't have any, but I wanted that as backup and I also had to have the Ge(Li) detector for obvious reasons, and I wanted that. And I remember, I can remember just saying where is the Ge(Li) detector I need that, in a way I need that more than I need the whole body counter, but I need both, its just that the whole body counter is here onsite, lets get the cotton picking thing moved, because it useless to you under the plume. It was sitting almost abutting Unit 1 there in one of the major downwind directions and it was just obviously, I didn't have to look at any data, I knew that if I was reading 10 mR per hour on a survey meter that that whole

body counter was useless. Just from experience 1 mR knocks it out so 10 mR, its just silly to turn it on at that point, except to warm it up.

YUHAS: As part of your functional responsibilities as a consultant were you involved in the emergency plan statements that eludes to the availability of backup counting labs? Are you familar with that part of the emergency plan?

PORTER: Yes, we all ... when was I involved.

YUHAS: When the plan was revised and worked on were you a party to incorporating within that plant its statements as to letters of agreement for individuals to provide backup counting systems?

PORTER: We I know that we had some general statements in the plan that say, that backup counting, that backup instrumentation is available from RMC, for instance, because thats one of their major functions is to have this available and I know those statements are in the plan. I do know that the actual statement about what was available was actually furnished to us from RMC and I remember having that incorporated into the plan as they wrote it so I would not misrepresent anything they could provide. There was a possibility of a conflict of interest there, since I use to, I was one of the originators of RMC and help

them, set them up, etc. and so I wanted to make sure that I didn't make any, since I was no longer associated with RMC, I wanted to be very sure that I made no statements about what they could or could not provide and therefore, we used they written statement they sent to us to put in the plan and that way I could not be accused of trying to speak for someone that I couldn't speak for. Does that answer your question?

YUHAS: Yes. In the interim from the time that you made the request the evening of the 28th til the time that those facilities arrived sometime on the 29th did you utilize the analytical capabilities of the NRC mobile van for isotopic identification?

PORTER: Yeah, we sent, as I remember, I trying to think back now, we sent several charcoals over there as a minimal probably more samples then that, I think that their sample logs will bear out the fact that they were pretty busy counting samples for us and of course, one of the problems was, that some of the samples we sent over was some of the early charcoals from the Unit 2 RMS System. Now we you say inhouse Health Physics are you including the evaluation of what was leaving the plant at the time, in other words, am I getting in an area that you are not questioning about?

YUHAS: Let me be more specific and we'll do it on the point that you just brought up, did you direct that the HPR 219 charcoal cartridge be changed when you came in?

PORTER: Yes. I asked that that be changed and that we get that over to the NRC counting lab, it was the only one that was available very early to count.

YUHAS: Now, to clarify my point, the method that you implemented your desire, was this you directly telling HP technicians for letting job of counting HPR 219 or did you specifically call Dubiel?

PORTER: I called over, well I trying to think, it seems to me that I, I'm not sure about this, I do know that I called over and talked to someone over in Unit 2, on the hotline and I'm not sure whether it was Dick directly or whether if, in other words, I can remember asking for Dick, because thats how it ordinarily should have been done, that the normal command pathway for this type of mission, and I remember calling over, I cannot remember whether Dick was there at the time and whether I can get him on the hotline to talk to him to say this needed to be done, but if I did not talk to Dick then I talked to the Shift Super., in other words, I talked to one of the two responsible people there that could get it accomplished and its just to many weeks, Greg, I can't remember who I talked to at that point, but I do know I did call over.

SHACKLETON: Gentlemen, I just like to caution you to help us in making the transcript to please try not to talk over each other. It makes it very difficult to try to transcribe.

PORTER: Excuse me.

YUHAS: When you called over to express your request that this charcoal filter be changed, were you told of the whole body radiation dose rates or the airborne radioactive materials present in the area of the filter at that time?

PORTER: I was aware of them because I think I asked about them to begin with. Because thats the first question, what kind of exposure are me going to have to receive in order to get this information? Was the first question, and they had a couple of very rough numbers, and so I said, well I only want to change this maybe once a day but I feel that because of the massive amounts of noble gasses thats gone out that I want to get this thing changed so that we have useful data in the future. And I said that I didn't want to do this very often but I felt that, I tried to set out once a day, I said lets try to do it once a day and I did say the work try and I said lets try to combine this with something else to somebody else whose going to be doing in there. So with the guy goes in he's got to be up on the 328 elevation anyway then he can change this thing out and look a couple more gages or do a

couple more things that operations needs to be done in any case. Cause I knew that there were things that operations wanted accomplished in the aux building at the time. So we had a very fast discussion about the fact, that yeah, its going to be costly, and I also remember saying hey fellows, I'm a virgin as far as exposure concerned, I have nothing for the quarter whatsoever I'll be glad to go in myself if you feel that your fellows are getting too much exposure performing this operation. And later on I did go in, they didn't ask me to go in for the first couple of days I might add.

YUHAS: When did you first go on the Island?

PORTER: On the Island itself, on the 28th of March somewhere in the vicinity of 7 to 8 p.m.

YUHAS: Did you proceed to the Unit 2 Control Room at that time?

PORTER: No. I proceeded to the Unit 1 Control Room where I was directed to go to.

YUHAS: Your actions in the first time that you went in to the Unit 1 Control Room were they primarily effluent release related?

PORTER: I guess primarily they were but not completely because one of the things I did was to think about the whole body counter, the other thing I did was to go over very early, that day I went over and I questioned the aux operators and the operations people from Unit 2 to find out who had been in Unit 2 aux building. Cause I wanted them whole body counted.

YUHAS: When you say that you are referring that you did go to Unit 2?

PORTER: Oh yeah. I was back and forth, for the first two weeks, I was back and forth for at least three or four times a day, sometimes a dozen times depending upon what was going on because I would ask for information and then there be a long pause and a guy would come back and say hey, we just can't get it for you now. And I would say okay, I don't want to hassle you I'll come over a get it myself if thats the case. They were busy and sometimes they could give me the information and then sometimes I got answers that I would say hey, I wonder if thats correct, and I better go over and look at the script chart myself and so I would go over and I would pull out the scrip chart and I would look at it myself kind of thing. This was constantly doing the first week of going back and forth, although my desk, I had actually an assigned desk in Unit 1 because I felt that I could be of more help to these people, you know kind of overseeing what the offsite teams was doing Oh, the other thing I did when I first arrived was to make sure

that the, in fact, before I even left to come up here I made sure that their was a group of Salems of Salems five best HP people, their supervisor of HP and their HP foreman, I made sure that the supervisor of HP and four HP foreman all experienced and all knowing this emergency plan almost as well as they knew their own because they were trained in the same, I made sure that they were on the way up here with their van, with all their equipment and with the procedural thing identical, so that all we had to do was to show them where to go to and they could relieve people, cause I knew the guys were tired, because they just came out of a five-week outage to begin and then they had been going for twelve hours or so. And we your twelve hours on top of a five-week outage its rough, and so another thing I did was to relieve these people and I talked to the people up at Susquehanna that had roughly the same training and I got them down here from the Berwick plant at SSCS in order to relieve these guys and that help to inplant HP because it relieved some of these people that were around in the environment that could turn their attention back to inplant Health Physics again. All these, see Greg, its hard to answer your questions because their was so many things that I was trying to just track for a little while til we had more people onboard that we could use for inplant Health Physics. But I did personally, each day I'd spent a little bit of time over in the observation center just telling Herbein what was going on and just relating to different people information to different people there. And so, on my way out, I would stop you know, in the early days

what they did was to take their dosimeter readings the first few days that you were talking about, they took their dosimeter readings at the guard points and both bridges, mainly at the north bridge for the first couple of days as a matter of fact, then it was switched to the south bridge. And what I did is I reviewed those dosimeter readings just four of five pages and just quickly went through them and anybody that look fairly high, I forgot, I picked a number, I would pick a number that would give me the top twenty of exposures from pocket dosimeters and I would put them down unless we whole body counted and the reasons was that I knew that we did not have, we could not expend the man rem to take a whole lot of air sample where these people were going and so the reason that I did this was not being able to air sample in all these places that I would have like to in ordinary, nonemergency conditions, air sample what I wanted to do was to get them whole body counted to make sure there was no surprises as far as halogen intakes were concerned. And so that's why I set that up by questioning the Unit 2 people, the aux operators are the people that were most likely going into the aux building and, you know, each of them I questioned them, for the first three days, I personally questioned them each shift to make sure I caught everybody, it was essentially two shifts in those days and then went out and got hit parade from the pocket dosimeters exposures and from that I just personally made up a list of people I wanted whole body counted to make sure that we weren't missing some significant internal intake.

YUHAS: When did you first go to the Unit 2 Control Room?

PORTER: When did I physically walk over there? I can't remember now, Greg, I really can't, it was sometime during that long night now whether it happened to be on the 28th or the 29th, I don't know, but sometime I was just in there for a little while because they were giving me some numbers on some flowrates that I really wondered about. And I was just there for a short while and then came right back again to my desk.

YUHAS: Did you make contact with Dubiel while you were over there?

PORTER: No. He wasn't there when I was there. Not the first time I was there, Dick wasn't there.

YUHAS: Did you review the methodology that the licensee was using to control entry into the aux building?

PORTER: No I did not.

YUHAS: Were you aware when you first talked to these auxiliary operators on day 1 and day 2 of the exposure they were receiving was not logged on the dosimetry sheets at the gates?

PORTER: I wasn't aware of that immediately, I became aware of that later on after they were, everything was being logged. I did, who did I talk to, I talked to several people and I found out that the, all the exposure logged at the gate didn't cover the whole story, I found that out right away. The first time I looked at those and then from thinking about the guys I had talked to, hey all these exposure aren't here so either (a) they didn't log them at the gate, (b) they didn't go home, which I think was the case in some cases, or (c) there was just a foul up, in other words it was given to the guard and the guard didn't put it down or something like that. And that's why I continued to talk to these people just to quickly, just to go and talk to them and say whose been in the aux building today and how much exposure did you receive, because the guys knew, they themselves were all trained to watch their own exposure and they pretty well knew what was happening.

YUHAS: In the first twelve hours, did you review to determine the licensees was actually operating his Health Physics department in accordance with the emergency plan?

PORTER: Well thats a big statement Greg, I certainly did some of this, your talking about a yea thick emergency plan. I, what I did was to try to, let me tell you what I did do, I did review to see what the exposure were, I did assure myself that the only people, people were only being sent in for very important functions into the aux building,

they weren't just people going in there cause they were interested in something that was not very important, the only people being sent in there were people that were happening to get information that was vital to trying to bring this to an orderly shutdown of the plant and there was some vital information that they did have to get in those early days, and it was understood by everybody, that hey, no, people, only a person, a person would only go in there if it was very important that he went in there and that again that we would try to send people in that had fairly low exposures so we would not have any high exposures. As a matter of fact, if one think about the severity of the accident and the amount of exposure received as you yourself know, there were many many higher exposures received in normal outages when there was no emergency involved then were received during this entire emergency. And so I think that speaks for itself as to the control that excercised, the bottom line speak to what the control really was. Now I didn't finish answering your question, I reviewed a lot of portions of the plan as far as the Health Physics, now my first thing was, the first thing that one think of is, okay, exposure control, the second thing is internal, external exposure control then internal exposure control, then breathing air. We made a lot of decision that were extremely conservative as far as breathing air is concern, as you know, we had a number of instances where we had very high levels of noble gasses in both Units and in all areas including the Control Room and when we would have a sudden, I'll use the word burp, of noble gasses the question

that needed to be resolved was do we have any significant halogen with these noble gasses? And so we went on respirators a number of times until we were able to reasonbly answer this question. When we were like 99% sure there wasn't halogens because we seen none in the past and we had no reason to think that the source term had changed, however, we still went on put people on respirators until we did resolve this point each and every time.

YUHAS: How was the point resolved?

PORTER: The point resolved by either getting a SAM-2 in a stable background area to count the charcoal over the SAM-2, well first of all it was resolved by taking a charcoal sample and that take a certain amount of time, so you can get a significant amount of air on it so you have reasonable statistics. Then we would either count in on a SAM-2 and get it to a jelly later or get it right to a jelly if there was a jelly was available.

YUHAS: Did you utilize the instrumentation installed in the air monitoring systems?

PORTER: We did to the extent that we could, I remember we had some problems with that, I don't remember what they were right now, but on Unit 2 there was some problem with that instrumentation, I don't remember

what the problem was, but there was a problem with that instrumentation. And so therefore, I knew that we had to take samples. It just been to many weeks to remember what that problem was, you know what the problem was, did you ..

YUHAS: I think you may be slightly confused, for the records indicates that Unit 1 control tower area monitor may have been out of commission, Unit 2 appears to have been operating properly according to the records.

PORTER: Maybe thats it, I knew there was a reason we had to take those, I'm just trying to remember back to that point. Its a shame we didn't have this interview six weeks ago, something like that, so that my memory would be better, I just been under a, I don't want to make any excuses, its been a long time. I'm trying to remember back and I certainly would not have been taking all these samples if there was an easier way around, I certainly looked for that easier way immediately, I started looking for that easier way and one of the easier ways, of course, is to simply use the Control Room data and for some reasons we couldn't use the Control Room data that why we had to keep using this, I can't remember what it is, the strip chart recorder will tell us that.

YUHAS: Lets go on to another point, did you provide guidance to the emergency director as far as how to handled single acute exposures in excess of 5 rem that might result as a result of the need to operate vital equipment?

PORTER: Well, first of all, there is guidance in our emergency plan in general terms, and secondly we didn't have anybody up there, at 5 rem, as I remember, we had a guy that exceeded 3 but we didn't have any 5 rem exposures.

YUHAS: Were there instances where individuals were sent into the auxiliary building were they likely could receive exposures in excess of 5 rem?

PORTER: This is conjecture, like could have, I don't know how to take that. In other words, I think what the maximum guy was about 3.2, 3.3, something like that if I remember, isn't that correct?

YUHAS: Individuals however were sent into fields of greater than 750 R/hr to perform valve operations and check various equipment.

PORTER: I realize that, but the point is, that I don't think anybody get significantly above 3 rem, so that the 5 rem question is conjecture.

YUHAS: My question relates to the guidance that you provided operations as to what measures and precautions to take in those instances where an individual might have?

PORTER: Well the guidance was to try to keep the guys below the 3 rem per quarter if as all possible, if thats what you mean by guidance. Now there a few instances where we weren't able to stay below that, but I don't think the term, the number 5 rem I can't remember that coming up, because I don't think we ever got close to it. Thats my whole point, in other words, what we were trying to do is to balance out the exposures of the people, so we kept everybody within the legal limits if at all possible, trying to stay to ALARA principal if you will.

YUHAS: What instrument was used primarily to provide radiation monitoring for entry into the auxiliary building?

PORTER: I believe, the one I remember most often being quoted was the teletector, thats the one that I think was used more often, thats the telescoping high-range GM instrument.

YUHAS: Did you advise the licensee representatives as to limitations of that instrument in xenon-133, when xenon-133 hits the predominant isotope present?

PORTER: No, I remember discussing it later briefly, but not during the period 3/28 to 3/30. However, I think that the HP people were fairly familar with the fact that, you know, none of the GM tubes have great response characteristics, and therefore one has to be aware of the limitations of the GM tube instruments. The guidance that I've always tried to give the plant is, where possible, use an ion chamber, so that you don't have to think about these response characteristics, but as you know, its not practicle to have ion chamber on the end of a 16 foot telescope kind of thing. At least I'm still waiting to the first one, I haven't seen it yet commercially available. And so therefore you have to use what you have at the time and, of course, there are energy response, there is a fairly significant response characteristic with the GM tubes.

YUHAS: Are you aware of the upper range limits on the pocket dosimeters that were available to individuals in the first three days?

PORTER: Well let me see now, I certainly saw a lot of 50 R dosimeters at the Control points, personally, because they were given to me as I would go in. I didn't ask them to break into the emergency kit and get out some of the 200 R ones.

YUHAS: Your fairly confident that you saw 0 to 50 R dosimeters?

PORTER: I had a couple in my pocket during one of my earlier entries.

YUHAS: Where would those have come from, the licensee has stated that the only thing he had available was 0 to 5 R?

PORTER: I just remember being handed one, it might have come from the emergency kit, in other words, I didn't ask where it came from, I just remember being given a 0 to 50 R at one point, and I can't remember which day it was either. It might have been as late as a week after the incident begin now that I think about. I just remember looking at the thing and just noting that, hey theres a big gap between 200 mR and where this one really starts to be reasonably accurate and thinking to myself that well I have to be careful, your better off with the 5 R one in a way if you keep watching it, because the gap between the end of 200 mR and the 5 R one is easy to bridge. the gap when you have a 50 R one is hard to bridge and I can remember thinking to myself that I might be better off with a lower range one, as a matter of fact. If what your telling me is that they only have 5 R ones available when they were just starting out and since no one went over 3 R then probably it was a very reasonable thing for them to have. And it was better than that one instance where I remember being given a 50 R one and just being thinking it out to the fact hey I have to watch it if I go to my 200 mR which probably why I didn't go over.

YUHAS: When were you first aware of the need to take a reactor coolant letdown sample?

PORTER: Let me think. I'm sorry, I can remember writing procedures, an outline for a procedure to take a sample but this was after the first sample was taken, I wrote an outline and showed it to John Collins, and he said, great lets use that as much as possible.

YUHAS: Is that referring to the sample that was taken on the evening of the 29th?

PORTER: I don't think that I had anything to do with the planning and taking of that sample. To the best of my memory.

YUHAS: Did you direct two chem HP technicians to go down and split that sample for distribution to various agencies for analysis?

PORTER: Did I direct them.

YUHAS: That's correct.

PORTER: The first sample?

YUHAS: The sample that was taken on the evening of the 29th?

PORTER: Boy, not that I can remember directing anybody to go take, to split the sample. I remember wondering how it was going to be split but I certainly was not the person who made the decision as to how it ought to be split. All I do is remember that it was going to be split among a number of groups but I can't remember directly the chemist to do anything directly. Point 1, I can remember directing to other people that hey this is how we ought to do something, but I trying to think, in other words, I don't even know the chemist that took that, yes I do to, it was Ed Houser, I don't remember having any discussion with Ed whatsoever before he took that first sample. I can remember that when he came up with a high exposure after having taken the sample I wanted to make sure that Ed had a whole body count, because I was told about the exposure. Thinking back on those early days, you got to remember that my memory is not that clear on those early days because I was tired a lot of the time, because I didn't have that much sleep. But, my first recollection about that sample was that Ed Houser had a possible overexposure and that I wanted to get him whole body counted and that, I was told that he had some surface contamination and I said okay thats could trick your whole body count, I'd like to go in there, I'd like to be there when they whole body counted, which I was. And Fraser Bronsen and I discussed it and we even brought Dr. James T. Brennan in, to review this.

YUHAS: Let me interrrupt, when did you accompany Mr. Houser on his whole body count, what day?

PORTER: I sorry I can't remember the day now, I can go back and look it up, but the point is I cannot remember right now specifically what the date was I accompany him. But I think this might have been three or four days later after his first count that I was told that he had some surface contamination there that couldn't come off and I though okay, the surface contamination interferes with the results of the whole body count significantly and that I just would like to review have him whole body counted again and make sure that Fraser Bronsen himself personally does it and that I have a chance to discuss the results with Fraser Bronsen and I was told that Ed Houser was a little anxious about his surface contamination, so I asked for Dr. Brennan. Talk to him, without me there and to discuss the significance of this surface contamination after we had determine how much was on the surface of his body and how much was internally deposited in his body as far as iodine was concerned. Now all this might have taken place as late as a week after the beginning of the event.

YUHAS: You were aware that Houser had surface contamination on his body the night of the 29th?

PORTER: Night of the 29th, I don't know...I'm sorry to be so vague Greg, but I just cannot remember.

SHACKLETON: Gentlemen at this point we'll turn the cassette the time is now 12:31 p.m. eastern daylight time, May 24, 1979.

SHACKLETON: This is a continuation of the interview of Mr. Sydney W. Porter, the time now is 12:35 p.m. eastern daylight time.

YUHAS: We are still discussing Mr. Housers' exposure, did you read the ECS log from time to time on the night of the 29? This would be the log in the Control Room.

PORTER: In the Unit 1 Control Room then. Yeah, from time to time, well, wait a minute now, did I read the log or did I discuss it with them. I can remember discussing a number of things with the Emergency Director there or Emergency Coordinator, I think we call him. I not sure, I can remember later on talking about a log but thats a few days later as far as a log was concerned. I remember just when I went in I sat down with him, and I said, okay whats happened and just verbally he's giving me a update on the thing. I don't remember spending time in that early day with a log. I might have, but I can't remember it. So I can't be sure again.

YUHAS: Were you aware that Mr. Velez also had substantial skin contamination as a result of drawing that reactor cooling sample?

PORTER: I think I was told that he had some skin contamination but that his whole body count showed that the total activity that he had was not that high. In other words, the skin contamination plus whats in the thyroid and in the circulating blood, the total thing was not that high. I vaguely remember questioning well what the total that he has, skin and thyroid and circulating blood and the number came back that it was less than investigation level, everything put together and so I don't know what you mean by substantial, I remember being satisfied that it was not substantial.

YUHAS: Can you describe to me what you consider to be the dose significance of having 1 microcuries per square centimeter of iodine on the skin?

PORTER: Well, I can't calculate it out right this second, but what I could say is, that I would say that if it was 1 microcurie per square centimeter that there would be there certainly would be a significant amount of dose involved with that and thats something that one should certainly try to scrub off. Once you try to just leave that kind of activity on the ..

YUHAS: Did you advise anyone to perform either a detail assessment of the distribution of skin contamination on individuals during this incident and that records be maintained and dose calculations be made for skin contamination?

PORTER: I remember thinking that what we needed to do was get off the easily removable iodine, point 1, so that we kept the exposure low and I remember telling people yeah, lets get off, lets take off what we can, I don't remember being told my anyone that we had one microcure per square centimeter of contamination.

YUHAS: I didn't say that, I just asked you the significance of one microcurie per square centimeter.

PORTER: Well its certain is a significant contributer to dose when you have levels that high. Thats obviously a problem that have to be looked into quite carefully. Now, as far as your earlier question, I can remember being told that the skin contamination is a total activity on everyone but Ed Houser was less then investigation level. Skin plus thyroid which makes it a fairly low level and I can remember making the discussion, alright, I have time now to go back and look at these things later because we have less than the total investigation level for everything. Now, Ed Hauser, I think, one early count was greater than the investigation level and we had him, we knew that some of that

was due to the skin contamination and they reworked his skin again it any number of times, you know, he scrubbed, he was asked to scrub, take baths, to soak, to get his skin contamination down and I remember the next count that we got from him, the skin contamination was in fact way down and he was well below investigation level and so therefore, I thought, well, there's so much to be done here I'm not going to go back and do those kinds of sophisticated kinds of assessments now. We'll go back, since we have the whole body count data which is much more accurate then just running a survey meter. Its hard to calibrate survey meters for skin contamination, I think you'll agree.

YUHAS: Did you suggest to the licensee that he collect bioasay samples from Houser or that he analyze those samples which had been collected shortly after the incident?

PORTER: I suggested that, let me think now, there was somebody I asked for some bioassay samples from and if my memory is correct is probably both Houser and Gary Reed. But then after the subsequent whole body count I told them, when we saw they was below an investigation level, I said, look we have a million samples to count, we don't need to count samples of people that are below investigation level because the lab was backed up for half a day worth of counting anyway at that point, at least a half a day. So I said, alright at this point its now longer necessary to collect the urines, and I used the criteria of the investi-

gation level as to whether or not the urines were necessary. Actually that is not a, how can I say, just because you go above an investigation level does not mean that you have to take urine, it depends upon how far above it you are really, but what I said was, lets take a few, lets take some. I can remember having the conversation with Gary Reed and I don't think I had it directly with Houser, I think I had it with someone else, but I can remember people coming back and saying do we need to save these and my saying, no we don't need to save them because they are, I looked at the records, I discussed them with Fraser Bronsen personally and I was satisfy that they were below investigation and that there was no reason to continue to take urines or to count them. But they were very conservative cause somebody just called me the last few days and wanted to know if there was some urines that was still there and wanted to know if we needed to save them and I said well make one more check, go back and have Radiation Management Corporation give you the answer because I have not reviewed in the last couple of weeks all of the internal dose data but as far as I know there is no reason to keep it, but in fact I said, as long as I have time now, lets just go back and re-review it one more time to make sure me don't need to get rid of these, but there are some that did exist as of about yesterday, I believe, some urines. They still had them back there. Trying to remember who called me. I can't remember who called me.

YUHAS: The call probably extends from the fact that I was personally concerned, Houser had supplied a urine analysis first catch probably eighteen hours after the incident. That sample sat there in the lab until today. Which counting it today is probably irrevalent. Counting of the sample would have been shortly after it was collected and I'm at a loss to explain why you having people collect samples and then just let sit for 45 days.

PORTER: Well I think, the word that I gave, they asked me a reasonable time, two or three days after the sample was collected I remember getting a call about this and I remember saying, hey I just finished looking at those records, there's no reason to collect samples any longer and looking at the whole body count results I see, since we still backed up in the lab this is just, it will be an interesting thing to write a paper about but we don't have time for that kind of luxury now.

YUHAS: Yes, let me ask you, was there any more significant whole body count then Houser's or Reed's?

PORTER: I remember too..maybe they were but I can't remember what they were. They were below the investigation level, I know that.

YUHAS: I believe Houser had something like 6600 nanocuries of iodine total body?

PORTER: Right, but when they counted his total body with a thyroid, blocked, shielded, I believe that he was well below an investigation level. When I was there, that Monday I believe it was, that Ed Houser was recounted I was physically present when he was recounted.

YUHAS: This must have been an subsequent Monday to the initial Monday count that he received, the initial count values were very high.

PORTER: Well maybe it wasn't Monday. Okay what I'm saying is, that when he was counted I was present there, I was satisfied that he was well, it wasn't even close, in other words, he was really well below an investigation level there was not many percent of the investigation level, or something like that, the numbers came out significantly lower than I had been lead to believe that they were.

YUHAS: Do you remember off the top of your head was an investigation level for iodine is?

PORTER: I should remember, 360 nanocuries maybe, something like that, I'm trying to hone in on a number and I'm not sure about the number now. No, I can't I'm just trying to think about it. Have you looked it up lately?

YUHAS: No. Let me ask you, have you maintained any sets of notes that would assist you in remembering specifically your involvement in in-plant Health Physics activities?

PORTER: Yeah, I have some sets of notes that would help me remember this.

YUHAS: Have you provided these notes to Mr. Behrle?

PORTER: No, I have not, he hasn't asked for them.

YUHAS: At this point, consider it as a formal request that you provide copies of your notes dealing with in-plant Health Physics for the period of the 28th through the 30th be provided to the NRC via whatever vehicle you see fit. And would like those provided within one week if at all possible.

PORTER: Okay. (taking notes) Provide to William Behrle. Okay.

YUHAS: I have no further questions at this time, I'll turn it over to Mr. Essig.

ESSIG: Sid, what I'll like to do is to, since I've interviewed you on two previous occasions and I've reviewed a number of records since that time and I've interviewed a number of people, in the process of sort of drawing together a picture of what was going on environmentally during the first three days following the event. And it seems pretty clear to me and I think you had stated this previously, was that first of all there were not during the first three days a particularly significant iodine-31 levels measured offsite in air samples.

PORTER: That's correct, I think that what happened was that we did have a few what I call false/positive caused we measured them with the SAM-2 but then when we put them on Ge(Li's) we found out that there was nothing there at all and it was resolving time problem.

ESSIG: And I think it was also established previously that the routine environmental monitoring program data the so call REMP were available at 8:30 Friday morning the 30th from Dr. Steven Gertz of your office, available to you.

PORTER: Yes, and I believe there also, they were available pretty early in that day to Bob Bores cause he made a record.

ESSIG: Yes, we established they were made available to Dr. Bores about 11:00 that morning, at least Dr. Gertz had indicated that he had called you.

PORTER: I think that I had walked over with these results and discussed them briefly with somebody that was in the Watch Engineer's office at that time, and I don't remember who it is anymore. But I remember getting these and saying hey we look like were in pretty good shape here and I remember just briefly discussing it with some NRC people and I can't remember who was there. Even you might even had been there then, I don't think you were there that early. I think you were there the next day, something like that.

ESSIG: Okay, what I'm leading up to is that if there were I think if you looked at the first couple or days, the first two days, the Wednesday and Thursday, 28th and 29. Is there anything of significant at all it was probably the offsite consequences of noble gas releases?

PORTER: Yes sir.

ESSIG: There was a lot of measurements being made with portable survey instruments, I believe you had stated previously that the source term estimates, noble gas releases probably weren't very reliable and because of that you were relying mainly on portable survey instruments really being a good indicater of what was going on in the environments.

PORTER: That's correct, we were relying on that before we got our REMP data which we knew would take a little while to get.

ESSIG: Right, and looking at some of the data which had been collected, there are a couple of points which I'd like to discuss with you, a couple of measurements and if I believe you were here, you were onsite at the time but it was one of the times when you happened to go home, go offsite and get a little rest let me know. The two times in particular are both Thursday morning, very early in the morning, one of them was at 0425 hours on the 29th and the other one was probably 0600 hours and several hours prior to that also on the 29th. And at those two times there were two of the more significant offsite radiation levels were measured. Those were two of the highest, I won't make a comment as to their significance, I'll just say they were higher than a lot of the other measurements that was made. One of them was barely offsite of the north gate which I'm considering for the evaluation purposes here is essentially number the public could be right adjacent to the north gate since it is on the Highway 441 side of the bridge.

PORTER: I believe it was onsite the measurement though.

ESSIG: The measurement was made on the dark station or on the Island side of the bridge?

PORTER: Well, the site is defined as outside perimeter security fence.

ESSIG: Okay, but the north gate...

PORTER: Oh thats right, your right, the north gate is yeah, I think of that being on site because its controlled by Met Ed and so it is part, in other words, I think if the land where the gate if I am not mistaken is, is Met Ed land. That's not, that land doesn't belong to an individual per se, so it is on the Met Ed site, if you will, and so I was using the site from that point of view.

ESSIG: Okay. The specific question I wanted to ask you about it, 0425 hours the survey records showed that a exposure rate of 27 mR/h was measured at that point and previously about 4 hours or so it was at 0050 hours was the last measurement made at that point was 3-1/2 mR/hr, as near as I can tell there weren't any measurements made between the two points and there didn't appear to be much if anything in the way of followup, that is the next measurement at that point was made at 0900 hours so that 27 mR/hr could have persisted for some time or it could

have been just an instantaneous measurement, I guess I really don't know, but first of all, were you aware of, I was going to ask you if you were aware of that measurement, but I recognized that you looked at a lot of numbers since that time, does that at all stand out in your memory?

PORTER: A couple of things stand out, number one, I remember there being several high measurements during the morning, I can remember saying that I wanted to go back and recheck those again and I can remember the wind was moving around so that no place had much dose for much of the time because of the wind swinging, it seems to me that the wind was really meandering that early and I could be wrong on that and I have to go back and look at the meteorological data, but I remember the wind meandering from the majority of that day from very early to very late it was a very poor day meteorologically is the thing that remain in my mind. Have you some data there on the wind?

ESSIG: Yes, I do. I have the wind speed and direction.

PORTER: I thought that you might have done your homework Thomas. (ha ha) And it happens that that period of time is the main reason that prompted the question. During that, at that time of the day, at 0425 hours, the winds were reasonable steady, that is they were on the order of 5 to 10 miles per hour from about midnight on the 29th to, it gradually

drop down to about 2 to 4 mile per hour at around 0900 hours, so all during that night the winds were fairly steady and they were blowing, well initially at midnight they were blowing from 144° and then it shifted to 198 and then it shift to 108.

PORTER: During what time period?

ESSIG: This would be between midnight and 0340 hours. Between 0340 and 0910 hours the winds were reasonable steady from about 108 to 90, in other words, they were blowing toward to 270 to 288, roughly towards the west to just slightly north of that.

PORTER: Towards the west, to the west northwest?

ESSIG: Right.

PORTER: So what your telling me is that this is not downwind, is that what your telling me?

ESSIG: That's exactly right and that was why I'm wondering if that would, I'm trying to explain this one to myself why it was that we seem to be measuring apparently 27 mR/hr at the north gate and its not downwind, the winds were fairly steady, it wasn't really a question of plume meandering at all.

PORTER: And the winds were 5 to 10 miles per hour?

ESSIG: Yes.

PORTER: And so therefore there should not by that much eddying at winds that speed the plume tends to go offsite without being stuck onsite for any long length of time, we know that from you know just years of experience of looking at local meteorology, we also knew it from just following the plume, now there, I believe that there was also downwind measurements made at that time, during those periods of time from 0340 to 0910 hours there was, most of the time there was at least one team and maybe even two that was downwind, one onsite, one offsite.

SHACKLETON: The time now is 12:57 p.m. and Mr. Behrle has a request.

BEHRLE: I'll like to take a break.

SHACKLETON: Okay we'll stop the interview at this time.

BEHRLE: Thanks.

RESNER: The time now is 1:01 p.m., Mr. Behrle has rejoined us, also note for the record that I relieved Mr. Shackleton as moderator for this interview at 12:35 p.m. and we'll pick up where we left off.

PORTER: I'd just like to make a note hear that the measurement 27 mR/hr is one that I can remember rather vaguely and asking that it be rechecked again and boy, my memory is bad here, to the best of my memory they went back and rechecked it and could not reverify the number so that I felt to myself, well it was a one time kind of thing and if what you say is correct the wind had shifted away from then, since they couldn't reverify and the wind had shifted. Its hard for me to remember to be very truthful back here, but I remember that it was not just one of these, there was 3 or 4 of these were there would be a single high number then they'd go back again and they recheck it and they come back and say, hey the numbers were significantly lower. So from that point of view I really can't answer your question except to say that I can remember a number of high numbers during that day, especially that early morning that I asked to be rechecked because they did not look reasonable, so to speak. And I also remember thinking well we had to pick of these TLDs soon and that would really tell us

the whole story, because there is a TLD fairly close to that point, as a matter of fact, in fact there's one on the bridge and then there's one just off the bridge which is representative of where maximum individual might be. I think that that TLD, as a matter of fact, was probably the uncorrected number about 80 millirem that is uncorrected for energy response that was used in the interagency Task Force Report on exposures. However, I must state for the record, that that number was gathered with a calcium-sulfate dosimeter which did not have energy compensation shields around it and that it not a final number, that is a raw data number which has to be corrected for energy response yet. And were in the process now of putting together a story on what the total cloud composition was in the way of radionuclides so that we can do the full investigation and resolve once and for all what the energy response should be. What that response correction should be. Does this answer you question Tom?

ESSIG: Yes, I think so Sid. What I'll like tc do now is to briefly discuss the other measurement offsite that caught my eye, the one I mentioned earlier at 0600 hours, the measurement that was recorded was 30 mR/h beta-gamma window open, 20 mR/hr window closed. And it was at 0600 hours in Goldsboro, approximately Goldsboro, and Wayne, I should state for the record that I have lying on the cable in front of us here a xerox copy of the Unit 1 wind speed and direction recorder and I have it unrolled so that were not looking at March 29th 1979, were looking

at the period time in question here and what I'd like to point out, Sid, is that at the period from well to back up here to even 0140 hours or so we have one anomaly here which I'm at a loss to explain but that is an anomaly of the wind direction indication which occurred perhaps less than the 5 minutes or so, but what this chart generally shows is that the wind was on the order of 5 to 10 miles per hour and gradually decrease in the later morning hours to somewhere around 4 miles per hour less. But during those early morning hours it appears that from about 0130 hours or so that the wind was coming out of roughly, these are 18° increments on this charts, so were talking about 2 increments above 90 that would make it 130° or so, so its blowing toward the northwest roughtly, north, yeah I would say that a fair statement, toward the northwest and then it gradually decrease or changes slowly in direction to come in out of 90 blowing toward the west and during that period of time there were surveys made up in the north/northwest to northwest sectors at about 1:30 and then there weren't any surveys made at all until 0600 hours at that was the survey in Goldsboro and thats the one that showed roughly 20 to 30 mR/hr.

PORTER: Tom I have a hard time with that, because we had a helicopter running back and forth since that time as I remember, that morning, he was running back and forth and he was bri.. have you checked the charcoal data to see that the charcoal wasn't taking over there. Because there

were survey meters readings made at every point that we took charcoal readings still. And I remember the helicopter survey running samples back and forth early that morning.

ESSIG: I have a summation of those here, let me just quickly look and see what kind of data we did have. The charcoal samples, the record shows that those that were analyzed on a SAM-2, we had one collected at 0050 hours at the north gate and then the next one that was analyzed with the SAM-2 was collected at 0600 hours at W 11 at the same time as this exposure rate measurement was taken and let me look and see if we have, we have a couple taken on the Island in the early morning hours and lets see if we have any that was analyzed by RMC at that time. We have a 329 at 0945 hours from location W 11.

PORTER: Okay, what was your statement earlier that you thought they were... you didn't find any beta-gamma measurements?

ESSIG: The statement was.. let me tell whats of some concern here to me. That we appear from the radiation survey record, its the record that I have which is the summary that was put together in the ECS as the results were radioed in. I requested the original survey sheets but have copies of those, but haven't yet received them. But according to that summary the surveys made in that general direction that is, between west and north/northwest, let say, during that hour in the

morning it appears that the surveys made in that direction the last one had been made about 0130 hours, as I recall I don't think any significant breeze levels were detected at that time and that was in the north/northwest to northwest and then there seems to be a gap from about 0130 to 0600 hours at which time were in Goldsboro and were measuring 20 to 30 mR/hr the question I have, based on the wind data the wind appears to be barely steadily blowing in the west to northwest direction all during the night and we have a fairly large gap in the surveys that were done and then all of a sudden we come up with a significant at least one of the more significant offsite measurements that was made, and the question that I have to ask is, do we know how long that may have persisted?

PORTER: No, two thoughts immediately come to mind, number one, I know I was up during that time, point one, and I know that there was great deal more data generated, now the question is was it properly, do we still have copies of it. That team didn't disappear that team was essentially downwind the whole time. Now they took a break, they might have changed at 0700 hours and they might have left at 0600 hours to go in to be relieved at 0700 hours but then somebody should have been out there at very shortly after 0700 hours there was another team downwind again.

ESSIG: The record show there was another survey made in Goldsboro at 0715 hours.

PORTER: Okay, there was a 0715 record...

ESSIG: In fact it only showed 1 mR/hr in Goldsboro.

PORTER: Thats west 11 isn't it?

ESSIG: Yes, West 11.

PORTER: Right, that confirms that part of my memory which I do not vouch for very well at this point. I think that there were other measurements made and we are going to have to find out who was there and if you want to pursue this I think you we will have to try to find out who was on the team at the time when that measurement was made in order to back this up. But there was an offsite team downwind during those hours. Because we had four teams out there at that point, not on the west shore, but the point is I know there was one team on the west shore almost continuously during all that time. Now the question is, did we get sloppy and not make records because they were all quite low, which shouldn't been done, but the point is in other words, the records was made but the question was it preserved because as you know we had the little sheet and the sheet was all as the recorder, as the data came over the radio phone the radio talker wrote these sheets and handed them to the nuclear engineer and thats the system that we had

going from hour 1 essentially and the question I have is we need to go through carefully and look for the sheet, it sound like you done that though, you actually looked at the sheets themselves.

ESSIG: I looked at some of the sheets there are small sheets, I think the ones to which you referred are approximately 8-1/2 inches wide by perhaps 5 inches long or so.

PORTER: Handwritten xerox form, so to speak.

ESSIG: Unfortunately, not one of those sheets has a date on it, it has a time, location and radiation level and these are present, were located in plastic bags, in white plastic bags, with drawstrings on them and I looked at those in trying to piece together and that's why I requested the original survey records which I've been told, I think by Mr. Mulleavy, he seems to think that they might very well still be in notebooks, loose-leaf notebooks in the emergency kits themselves and so the other day I requested Mr. Behrle if he would make available those, look for those records and make them available.

PORTER: My only recollection there, boy, I don't have that many rec... my recollection was that we were... certain high numbers were popping up and as soon as I heard a certain high number I would turn around to the radio recorder or to the Nuclear Engineer whoever is handiest at

the time and say lets try that one again. Lets reverify and I don't remember that I ever reacted any differently except to say that when it was a high number, I say, hey lets reverify that, lets see if they get the same number again. And I remember this happening not at just these two points but a number of other times, when there be high numbers and then they go and reverify this. Sounds to me as if we were missing some sheets or the sheets aren't dated or something like in there, but I do not remember for any extended of time for having any high numbers. I remember that they were, my original statement was before we talked about specific data there was a number of isolated high numbers and we went back and reverified them and by that point the wind had changed or something and that there was... or they just simply could not get the number again.

ESSIG: Okay, the point is this particular questioning is as I said earlier I'm focusing right now on the first two days, that is the period of time before the intended TLD results were available to you, and just to see if we in a... if there was any times situations where perhaps a recommendation could have been made to the state, I think you'd established that your own perco level was on the order of, what you got your accumulated dose of about a 100 mR or so or 100 millirem and so I just looking if there were situations that were approaching that which may have gone unnoticed is what I was doing and this one of course sort of begged the question being that it could have been only

persistent for a few minutes or it could have been since the wind was going in that direction for some time it could have persisted for several hours.

PORTER: What my memory is that wind the wind persisted for all those hours the instruction that that team had was to stay in the downwind direction and to continue to take measurements. And they.. during that period of time I can not imagine they didn't call in a measurement at least once an hour and most of them was much more frequent than that, as a matter of fact, so I think were missing some data or we have some data that is in fact not dated properly, is what is sounds like, but I can only tell you what my general recollection was that there was a number of spotting numbers that we were not able to reverify when the team went back to that actual location. But if the wind was staying there, then probably the team stayed there, they might go out of the plume a little bit but then within an hour they were back in the plume again. And I don't think there was any exceptions to that, that was one of the ground rules that we had very early on in the game that we would have one team onsite and one team offsite downwind at all times with no exceptions to that. The other thing that I can remember doing occasionally was since the people were standing there in the plume the whole time, often, I would just simply ask what exposure do the team members have. Which is the other thing, since their there all the time, and see that was the other check that we had I don't think that

we recorded the answer to those questions in the Control Room when they came through but since the guy was standing there downwind of the plume the whole time, I figured well if there ever was a maximum individual, its that person and when he would call back and say, well I got 15 mR something like that, and I ask how long you've been there, six hours, that kind of thing, then I say alright, I would think of that something else that needed to be thought about kind of thing. That was other check that I would have to admit was not written down but I was also, I had some concern for the team members and their exposures and I wanted to make sure that those team members were not exposed. And as far as I know we didn't have any exposure that got up for these team members, even so they were sort of downwind of the plume we did not have any numbers for those guys that reach a 100 mR.

ESSIG: I think that

PORTER: That gave me, I think a reasonable feel for the data.

ESSIG: Okay, Sid what I'd like to do now is to move on to a couple other areas and hopefully these areas will not result in very long question and answer period. Amongst the records we were provided by Met Ed I have in my hand now something that appears to be a log and that it has time recorded in the events so on. Now one of the these was actually started before you arrived onsite, and another one was

started later on, just ask you to look at these, do they look familiar with you. Now I have done some scribbling of my own on here, I've added a date for example, and anything that's in there in any color pink is something that I added. I'm trying to determine whether or not this was a log that was maintained at the ECS or if it was a log that was maintained at the observation center or in Emergency Control Center or just exactly where it was maintained? The second and third days, by the way, is considerably thicker and I don't even know if these are in fact the same log, the same point of origin.

PORTER: The guy keeping the log, I can reme.. lets see Lexy Garry did not come on the first couple of days.

ESSIG: He came on on the 30th.

PORTER: Yeah, he came on the 30th, I remember Lex keeping a log very specifically. We did have a lot of information being written down as it was being telephone to the BRH over the hotline to the State, over the State hotline and so its possible this was information that we felt was significant and we were telephoning to the BRH, I would question the operators, the hotline operators to see if this was what they were writing down. Cause the operators were also keeping a log as I remember.

ESSIG: These were in the ECCS then?

PORTER: What I'm saying is this could have been what the hotline operators were writing.

RESNER: This time we changed the tape, the time is now 1:23 p.m. eastern daylight time.

PORTER: However, this looks like an observation...

RESNER: This is a continuation of Mr. Sydney W. Porter. The time now is 1:27p.m. EDT.

ESSIG: I'd like to move on to another area, briefly Sid. I have in my hand Procedure 1670.4, which is the radiological dose calculation procedure.

PORTER: The Emergency Plan.

ESSIG: Yes. And I think you had previously stated that you had reviewed all or part of, most or all the procedures that implement the Emergency Plan. There is a specific point on here that I wanted to clarify, and it's back in the Enclosure 3 to this Procedure, and it involves the calculation of...where one takes the source term, the atmospheric

dispersion primer of the X/Q, multiplies the two and then divides by the wind speed. Now in the process of dividing by the wind speed, is that done because the X/Q values have been normalized to...or based on a wind speed of 1 mile/hr or something.

PORTER: A wind speed... It's either 1 mile/hr or 1 meter/sec., whatever the units are there. That's correct.

ESSIG: These are in units of miles per hour.

PORTER: Alright, so if it's miles per hour then they're normalized. The overlays that we have are normalized to that. That's why we do that.

ESSIG: Okay. Very good. That takes care of that point. I was able to I think to clarify a question which I had asked you on one of the previous two times we had interviewed, concerning management verses direction of the teams, and I think your statement that the team direction never left the ECS is probably the true one as near as I can tell. That is, there are a number of people that I had asked who seemed to be, who were giving the answers, but they were a little fuzzy. And, like if you recall, we had mentioned Mr. Graver and as near as I can tell, the statement that you had made earlier that Mr. Graver had never directed any of the surveys is true, that is, that they were always

directed out of the ECS. The ECS was telling the teams where to go. Mr. Potts indicated that there were a couple of times and he nipped it in the bud right away, when the observation center had indicated apparently, Mr. Herbein was there, and he wanted a couple of surveys made, so the observation center was directing that these be done. Potts got on contact with them right away and assured them that those surveys were to be directed from the ECS. So that was taken care of; and that's the only instance that I was able to find that the direction was other than from the ECS. So I just wanted to clarify that point. Another question that came up was: you had made some estimates of radioiodine of these effluent releases. The question, and this is not a question that I have, it's one of the other individuals on our investigation team who was unable to be here for this interview; he wanted to know what the sources of information were that you used in determining the flow rates, the ventilation system flow rates.

PORTER: The ventilation system flow rates for what monitors...

ESSIG: That were used in the radioiodine release calculations from the facility.

PORTER: We used the strip chart recorders from the Unit 2 control room, and when you use those, you have to be careful that you do not use the printed numbers on the strips, themselves, but you have to use the vernier above the strip in order to interpret the line on the strip chart recorder.

ESSIG: Okay. And I think there were references made to a so-called corrected flow and some of the correspondence, I think, in your data center file, that Mr. Jackson was able to find. Does that sound familiar--a corrected flow--what specifically was being referred to?

PORTER: Okay. We were mostly referring to, well first of all, some of the data we had gotten over the phone and we wanted to go back and verify it. We got it over the phone during a period when people were very busy, and we went back and verified the flow with the strip chart recorder, and we also, during the early days, had not added in the service building flow. The service building flow is estimated to be at approximately 7000 cfm. I think I probably should state for the record that it might have been less than that, so if there is an error, the error was, after we corrected it, we erred in the conservative air mode and if we see that this 7000 cfm was too high, which it very well might have been it looks like now, we're to have to recorrect again, but it will be in the conservative area. However, it was not conservative to leave that out, and we knew that we had to put something in for that

and we just had to go get the data. We, subsequently, went and got the data, which is 7000 cfm, and we are having that system recalibrated in the next few days. It's been on the agenda for a week to be recalibrated now, and when it's recalibrated, it probably will be not a significant change; but if it is, we'll go back and correct the record.

ESSIG: Okay. I'll move on to another area then, Sid. There was an entry in one of the logs and I'm not sure if it's the one I have in my hand right now, which I think we've considered an ECS log.* It may have been another log, but the entry was that, and I know this was before you arrived on the plant--I'm not going to ask you to verify that this was done, but I just want a little information about it if you could--that at 0737 on 3/28, that an instruction or request was made to turn on the Yorkhaven monitor, and that's about all it was. I just would like, for my information, could you tell me what the Yorkhaven monitor is--is it a liquid monitor at the dam, or is it merely a sampler and not a monitor at all?

PORTER: Well there are two things there: a) we have a, they take samples for us at Yorkhaven and they composite for us, and they might have been referring to taking water samples; but I believe also that there's a survey meter over there, and they might have been referring to the fact that these guys should turn on the survey meters to see if there is anything detectable coming their way.

ESSIG: When you refer to survey meter are you just talking about...

PORTER: A beta-gamma survey meter. Right, a beta-gamma survey meter and both are over there, and since I wasn't here or I was not onsite at the time, I have no way of knowing what they were referring to. It could have been either one since there is such vague wording.

ESSIG: Or both.

PORTER: Or both.

ESSIG: Okay. When you say they, to whom would that instruction been addressed?

PORTER: There are not that many people at Yorkhaven. So (laughter), so that probably would have been whoever was in charge of the shift, I would imagine.

ESSIG: It would either be Yorkhaven city or village employees or ...

PORTER: Oh no. Yorkhaven is a, I believe it's owned by Met Ed. It's a power plant, see, it's a power plant and so therefore they're Met Ed employees, and they have been pretrained to use survey meters, I know that. They also for years have been taking water samples for us, and

therefore, we have the ongoing sampling program, the water sampling program, so it could have been either/or, and at this point I have no idea.

ESSIG: Okay. In one of the other logs that are referred to, I think, this one is the observation center log. On page 47 of that log, there is an entry, at 1559 which I have circled red, and I ask you, the entry question says probe may be contaminated again. Was that a frequent occurrence? Were you aware that that kind of thing was happening? Can you shed any light on the basis for that statement?

PORTER: Alright. This is from the helicopter and they had been taking a number of samples over, right over the vent. When you take samples right over the vent, you know, you can have a fair amount of rubidium that can be formed when you have very high levels, and you can have a rubidium daughter product contamination. It's the only thing I can think of, as far as how do you contaminate a survey meter detector in the air. The thing is, if you have high enough levels of noble gasses that some of them--the xenons are going to be decaying to rubidiums, remember, or the kryptons to rubidiums; but anyway, some of noble gasses decayed to rubidium-88 and rubidium-88 is a particulate, and especially, if you have a survey meter which has a charge on it, which they all do, of course, it's how they work the GM probes; then we have a situation where you can contaminate them. Normally, they're very

easy to decontaminate--you can just wipe them off with a soft cloth--and that, a dry soft cloth, will be often a very effective decontaminating process for these things. They are easy to decontaminate, or with a 15 min. half life, you just wait around for awhile.

ESSIG: When we speak of contamination, were you aware of any instances where use of an ionization chamber, that there was any xenon which either fused through or around the mylar window, and actually was, at present, inside the ionization chamber itself. I am just wondering if that might have been the thing that was referred to.

PORTER: That's possible, too. That's certainly possible, especially with plastic. For some reason, we really see this on the installed monitors; we see this phenomenon happen again and again, so therefore, that's possible that this happened. We had mostly experienced teams out there and the guys were used to checking their backgrounds often, and they had enough extra survey meters so they would just switch off. Will have to ask them about that. I had asked the people that came up from other sites to be aware of the fact that they could contaminate their probes, and to every once in awhile, put it in a low background area. Because see the truck had bricks in it, they could have stuck it under a few bricks.

ESSIG: Do you recall that this was a significant problem in terms of its frequency of occurrence, or was it just limited to the situations that you were discussing--the helicopter measurements close in to the plant vent and that type of thing? As far as the other environment surveys ...

PORTER: I think that there might have been a few onsite ones, on ground level onsite, and the helicopter ones are the only ones that I remember. There might have been some more. The other point, of course, is that this makes you err on the conservative side and so therefore, you don't spend much time getting rid of this error, when you have other better things to do with your time.

ESSIG: Right. Let me ask one last question and then I think we can conclude the interview. The other log that we had here, which I think is perhaps the ECS log or 328, it had an entry at 2120, which I've circled in red, and it makes reference to at 2120 offsite survey highest levels, and I've been unable to really understand what that statement means, because at that period of time, in looking at the records seen, I didn't see any particular high offsite levels at that time. I think there were a few in the Island that were high, and maybe that is perhaps what is referred to, but to me offsite means off the Island. Were you aware of anything....

PORTER: Yeah. During that time, we were having high levels onsite as I think you know, and therefore, my continual question which didn't get written down anywhere probably was: what are the highest offsite levels--let's make sure they are documented. I kept asking again and again and again. Either I would ask or the radio-talker would ask: what are the highest levels offsite in the middle of the plume. And so when we had high onsite levels, the natural reaction of the person running things is, what are the highest offsite levels, so I think this might reflect my concern because I was there at this point. I was physically there and physically asking questions, and so, I just asked that again and again for days, what's the highest offsite level. As soon as we'd get a high onsite level, what it did was to trigger us to say, let's make sure we have an offsite measurement that corresponds with the high onsite measurement, so we know what the situation is in the environment.

ESSIG: Okay. I think that's all the questions I have.

RESNER: Okay. Mr. Porter, thank you very much for coming over here today, and this concludes the interview. The time now is 1:42p.m. EDT.