UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

In the Matter of:

IE TMI INVESTIGATION INTERVIEW

of Edward C. Egenrieder, Radiation Chemistry Technician

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NRC PERSONNEL:
Douglas M. Collins
John R. Sinclair
Gregory P. Yuhas

SINCLAIR: The following interview is being conducted of Mr. Edward C.Egenrieder. Mr. Egenrieder is a Radiation Chemistry Technician, Senior, at the Three Mile Island Nuclear Power Facility. The present time is 6:29 p.m. Eastern Daylight time, todays date is May 9, excuse me May 8, 1979. The place of the interview is trailer 203 located immediately outside the south gate to the Three Mile Island site. Individuals present for the interview will be interviewer's Mr. Douglas M. Collins, Radiation Specialist, Region II, Nuclear Regulatory Commission. Also present Mr. Gregory P. Yuhas, Radiation Specialist, Region I, U. S. Nuclear Regulatory Commission. My name is John R. Sinclair, I'm an investigator, Office of Inspector and Auditor, U. S. Nuclear Regulatory Commission. Prior to the interview being recorded Mr. Egenrieder was provided with a copy of the document explaining his rights concerning information to be obtained regarding the incident at Three Mile Island. In addition, Mr. Egenrieder was apprised of the purpose of the investigation it's scope and the authority by which Congress authorizes the Nuclear Regulatory Commission to conduct an investigation. On the second page of the advisory document Mr. Egenrieder has answered three questions. The questions and Mr. Egenrieder's responses will now be recorded as part of the interview. Mr. Egenrieder the first question: Do you understand the above?

EGENRIEDER: Yes I do.

SINCLAIR: The second question: Do we have your permission to tape the interview?

EGENERIEDER: Yes.

SINCLAIR: Do you want a copy of the tape or transcript.

EGENRIDER: Yes.

SINCLAIR: Ok, thank you. At this point, could you briefly give us your background as it relates to employment at Metropolitan Edison and the nuclear industry?

EGENERIDER: Well, I have really no prior experience before I came to Met ed in the Health Physics portion, I had went to, I had a high school education and I went to Penn State University and took a lot of chemistry courses, I was in a pre-vet program and I never graduated, I quit, but that was, that's all the experience I had before I came to the Met, and I guess my first year with the Met I was up at Crawford. I came down here in 74, and the only really, training I got, theory, training was from Dick Bowers, I guess his films. I guess there was like 12 films or something like that, that was the only training, everything else was on the job.

SINCLAIR: Ok, thank you.

YUHAS: The way this interview will go is, Mr. Collins, myself and Sinclair will always use our last name before we speak, since we're only interviewing one person there's no need for you to do that. That's why we keep saying our name, Yuhas, it's gonna be a little confusing. The way we're gonna go through this is first we're going to give you the opportunity to describe how you became aware of the incident on March 28 and then have you go through your involvement, when you came to work, what duties you were assigned to, for about a three day period, at the conclusion of that part of the interview we will go back and ask specific questions to try to get a little more detail over the high points. After we've gone through asking questions about the involvement for that three day period, then we'll give you an opportunity to bring out any high points that you, you may want to bring out regarding the health physics program, either that which may be complimentary or that which may be derrogatory, ok, and then we'll conclude with a few questions of our own in the end. So if you would, please give us now in your own words how you became involved in the incident and what your actions were for the first several days.

EGENRIEDER: Ok, well March 28, I arrived at work approximately 7:00 a.m., we walked into the processing center and everyone was standing around, he said there was a radiation emergency so we proceeded back to the Health Physics lab and we got back there and no one seemed to

be around, everyone was out in the plant. I guess it was Pete Valez was the first foreman we saw, he came up to me and said go out and check the radiation emergency kits, make sure that they're in operating order, so I went out there and we got the SAM's out and made sure they responded. We put them up against a check source, to check the efficiency, check the batteries in the PIC-6's and proceeded just to wait around until we got some instructions. Meanwhile someone said something, I heard over the walkie-talkie of someone was concerned with discharge to the river. So I went down to RML-7 and got a station effluent sample to bring back to have it counted. I guess it was approximately 8:30 or maybe before that, Pete Valez called us and asked us if we were on our way to Goldsboro and I proceeded to tell him that we had never received any instructions where to go. So in about ten minutes I guess, we had finally rounded up the vehicle and we proceeded to Goldsboro to start our, sampling. I'm trying to think, are the locations important. I don't really know, I know we made. . .

YUHAS: Not, not the specific locations, generally what we're interested in is that you went to Goldsboro and what kind of samples did you take and about what did they read and where did this information go, that you collected?

EGENRIEDER: Ok, well I know there was three different place in Goldsboro we took samples. We took the particulate, the charcoal, and the dose rates. We found nothing on all three samples, and I guess then we

proceeded, well we monitored, going over to Goldsboro we monitored the dose rate the whole way over and found nothing, and coming back over we did the same and I think it was around the turnpike bridge we noticed a little bit of deflection in the needle, on the dose rate instrument. The air samples that we took, you know, we counted them on the SAM-2's, but I really don't have any faith in the SAM-2, because it seemed like background was always jumping around, you know, one time it would be real stable, the next time you count it it would go nuts. So we always, we saved those samples to have them counted later. We proceeded over to the east coast, I guess it was, first stop was Geyes Church, we took an air sample and then we gave some of them to the helicopter to take over to I think their pickup was the Holy Spirit Hospital, they were suppose to pick some samples up over there. I guess the rest of the day we just, well until about 5:30, 6:00, we just stayed on, I stayed on the monitoring team just doing dose rates. Let's see, I'm trying to think the, ok, about 5:00 I came over to Unit 1 control room to help, to relieve some of the people that were over there and found myself totally useless because no one seemed to know what was going on. We just like, stood around and got in everybodys way. At 7:00 I was relieved. I went back over to the observation center to go, to leave for home, and they come up to me and ask if I'd go back out on the monitoring team and we proceeded north out Route 441 monitoring mostly dose rates, We were told to just track the plume. So we got up to around Lower Squire township on Fuller Mill Road and we noticed 13 mr/hr, so, this was right outside the little

village of Shopes Gardens. So I decided to go into Shopes Gardens and take dose rates in there, see if there's any appreciable difference cause that was closer to the site. We went in there, we grabbed some samples, we, you know, once again we counted them on SAM-2 but we saw nothin, so we just continued tracking the plume. We went into Rediford and that's when it finally dropped down to less than .1, so I guess it was about 12:30 that night we finally got back to the observation center. I went home. The next morning, I was assigned to the Unit 1 control room again, and I guess it was about 8:00, Ken Bryan, the shift supervisor, came up to me and said I want a sample of the Unit 1 letdowns so that we can go into cold shutdown we got to know boron, and I told him there was no way I was gonna go into the nuke sampling room and get a sample for him and we looked at the prints and we came up on a, we figured out that we could sample the drain off of RML-1. We could flush that right to the floor, then grab a Unit 1 letdown sample through there. So he agreed it would be a good sample point so he said well hold off until we get the, I think it was the "B" bleed tank at the time, he said that's on clean-up right now we're gonna take it off then you can get both samples at the same time and run them, to minimize you time your time that you have to spend in the radio chem lab. Meanwhile I had gotten relieved, and I went over to the observation center and was sent up in the helicopter, to do some monitoring up there. Earlier that day they got a, I think it was a three-hundred or eight-hundred mr over the Unit 2 stack, so they told me to go up and verify that reading. So we kept inching our way

toward the stack and I guess we were about ten feet over it and I got a 3R reading. So, instructions came from ECS, I called all my reading to ECS by the way, ok, and the ECS came over and told us to proceed in a, I think it was a north easterly direction, just keep tracking the plume. So we kept tracking and tracking and when we finally got over to the mountain range to the north of Route 22, and it was still reading 8 mr/hr so I called him back and told him I thought the instrument might have been contaminated, or you know, just malfunctioning. So we came back and got three more instruments. We got a, got another, got an E-520, I got an RM-14, another R02 and I think the NS, Dale Ferguson gave me on of his digi meters or whatever it is. I don't know exactly what it's called, but I took all four of them, it was, up to verify. We got no significant, once we got away from the island we got no significant levels at all. So I came back down and I, I had no idea what time it was, you know by this time, and they sent me over, told the helicopter to come back, and pick up some lead containers, go over to the Hershey Medical Center and pick up some lead containers for, to send out the letdown samples in. So we landed, we came back to the observation center and landed, and was getting ready to go home when Bob McCann came up to me and said would you mind working a couple hours. So I said well, I asked him what it was He said well we gotta get the TLD system started, he said they got the equipment over here. I said, everything's a mess. So I went up to the top floor of the observation center and there, the TLD's were scattered all over the place, the TLD machine had just been set up. So he said, well work on

this and you know, when you get it finished then you can go home. So I spend forty straight hours getting the TLD system straightened out. I got very little support from the health physics foreman at the time. The only one who cared was Fred Huwe, everytime I asked him for something he was there to, you know, support me. But, they sent me no other technicians to help; strictly all me. We had to, we had to zero all the badges that had not been issued cause they received approximately 400 mr while they were in the plume down in the TLD trailer, so I guess that was, that would mean at Saturday morning at 7:00 I finally went home. I didn't come back, I came back out Saturday night to see if I could help out and they told me to go the hell home and come back Sunday morning because I wasn't scheduled to work. So I came out Sunday morning, and God, I don't even know what I . . . I think, I think I was assigned back to the Unit 1, no, Unit 2 control room at the time and all I did over there at that time was do a turbine building survey and that was it.

YUHAS: Thank you very much, I'm sure that management must appreciate your dedication.

EGENRIEDER: Well the only response I got from management, from some of my foremen said well you really screwed up that system, you know. .

YUHAS: Ok we'll talk about that later. Alright, I'd like now to go back and start picking up specifics. When you were in the process center, did you hear the site emergency radiation alarm sounded or any word passed declaring a site radiation emergency?

EGENRIEDER: No, I can't really say that I did because I know we came in the, we came in the plant that day, there was me and two other technicians that arrived at the same time and I said uhoh looks like we have trouble because there was no vapor coming out of the cooling towers and you could see some residual steam coming off of the release, and we walked in and that's when they said they had a radiation emergency. I hadn't heard no alarms.

YUHAS: When you went to the ECS station in Unit 1, chem lab HP area. . .

EGENRIEDER: HP area.

YUHAS: Ok. Was any other foreman other than Pete Valez in there. . .

EGENRIEDER: There was . . .

YUHAS: Establishing the ECS?

EGENRIEDER: No, at that time, you know, there was no, like I got there before, I guess, Pete, Pete did. I think Pete came in right after us, and his first instructions was go do the, go take care of the kits. I think, I think when I got there, there really had not been an emergency declared, you know, real a real emergency. I'm not sure but I was under the impression that it had not been established yet, he was just sending us out to check to make sure in case there was, we'd be ready.

YUHAS: When you got out to the kits, did you find all the kits in order?

EGENRIEDER: Well there was, only three of the kits were there and two of them checked out. Two of them responded, the other one we couldn't get working at all.

YUHAS: How many kits are normally suppose to be in the process room?

EGENRIEDER: Four.

YUHAS: Where was the forth kit?

EGENRIEDER: In the, Tom Mulleavy's office. I don't know if was out of, I think it was out of commission, because I believe we went in to check it and it wasn't responding.

YUHAS: To make it clear now, you went out to the process center, you found three kits, is that correct?

EGENRIEDER: Right.

YUHAS: And in one kit, the SAM-2 was not operating?

EGENRIEDER: Correct.

YUHAS: What specifically was wrong with the SAM-2?

EGENRIEDER: It just didn't count, you know. . .

YUHAS: No response.

EGENRIEDER: Right.

YUHAS: And to the best of your knowledge the forth kit was in, in Mulleavy's office?

EGENRIEDER: Well, I know it was in there and I'm pretty sure it was inoperative. Because I think I remember going in there, it was either me or the guy that was assigned to me, went in and checked it.

COLLINS: Who was the other individual with you?

EGENRIEDER: Jim Dupes. He went throughout, he was with me almost the whole day, doing the monitoring. . .

YUHAS: After you checked the kits out, did you tag the kit with the bag, with the bad SAM-2, did you put a piece of tape on it saying the SAM-2 doesn't work or anything like that?

EGENRIEDER: No we didn't, we put it back and I guess, I don't know everything was sort of rushed that day and I know, the one team came out and we gave them the one that worked, the one that we had put back together, you know, put it back in the suitcase. We gave them that one and then we grabbed the other one, when we were told to go to Goldsboro and then the third party came out and grabbed one and we said hey well that one doesn't work, but I think they left with it anyhow.

YUHAS: Was the third party composed of Mr. Leech and someone else and someone else, an auditor?

EGENRIEDER: Right, that's correct.

YUHAS: Ok, did they have a designation when they picked up the bad kit?

EGENRIEDER: Yeah, they were to go to Goldsboro.

YUHAS: Do you know what team they were. were they team A, B or C or was it was it . . . ?

EGENRIEDER: I, I can't really um, I, I'm not really sure at the time, I think they were team Charlie,, I believe. But, I think Alpha, originally team Alpha was the first one sent out, and they were originally told by one foreman to go offsite and meanwhile another foreman had called him and told him to grab some samples on site. So I think then we became team Bravo and they sent us off towards Goldsboro and they had dispatched, comprised of Tom Leech up to Goldsboro and they were to go to send Tom Thompson by helicopter to Goldsboro, but I guess they realized, you know, they didn't have any kits to support it.

YUHAS: So for team Bravo, I have Egenrieder. . .

EGENRIEDER: And Dupes.

YUHAS: Ok. Team Charlie, I have Leech and an operator.

EGENRIEDER: And Jim Randisi was the operator.

YUHAS: Jim Randisi?

EGENRIEDER: Right.

YUHAS: And do you know who team Alpha was?

EGENRIEDER: Ken Burkholder and Dave Ethridge.

YUHAS: Ok, fine thank you, that's very helpful.

COLLINS: You mentioned that you took a sample, prior to going out, of RML-7?

EGENRIEDER: Right.

COLLINS: Who told you to do that and what did you do with the sample after you collected it?

EGENRIEDER: Well no one really told me. I just heard them, you know, through the walkie-talkie, I heard them talking about it because everyone, it seemed like everbody was on a walkie-talkie station somewhere and I heard about it, so I one of the, the outputtings operator came into the processing center. He helped us open the kits and everything, and I said how about letting me use your truck so I can go down and get this for him because we have the sample bottles right in the emergency kits. So I just called in and told them, you know, we checked the kits out and I was gonna go down and grab it for

him. So I went down and I came back up and I gave it to one, I don't know, one of our foremen came out to make sure, you know, that the teams had been dispatched and I gave it to him and I have no idea what happened to it after that.

COLLINS: How was the sample identified, do you recall?

EGENRIEDER: I wrote RML-7 on the. . . .

COLLINS: In the time column?

EGENRIEDER: Yes. Now I do believe, going back into the, you know, after we got back into the HP area, you know, when we took over Unit 1 again, I did notice a printout saying RML-7 you know, and it was around the time that I had sampled it. But the, I think the background was so high on the GeLi then that you know, that that results, you know, you couldn't really say that they were accurate.

YUHAS: About 8:30 you were dispatched by Mr. Valez,. well Mr. Valez contacted you but did not dispatch you, ok, you mentioned it took you ten minutes to find a vehicle, was this after you were told by Valez to go to Goldsboro or were you contacted by radio from Mulleavy to go to Goldsboro and then . . .

EGENRIEDER: No we we were contacted by Pete over the radio to go, ok. We run into this everytime you when a drill, you know, you don't have a vehicle and it seems everyone's reluctant to give you the keys. So what finally happened, I flagged the operator down, the outputtings operator and I stoled his truck. Ok simple as that. I said hey, we need it, we're gone, and away we went.

YUHAS: So it would be fair to say then that you actually commendered the vehicle.

EGENRIEDER: That's right.

YUHAS: Since. . .

EGENRIEDER: Right.

YUHAS: . . . no vehicle was available.

EGENRIEDER: It was, it was up to us to get our own vehicle, and I know at the time team Charlie, he took his own personal vehicle so he could get going.

YUHAS: Ok. Good. Then you went to Goldsboro for a period of two to three hours?

EGENRIEDER: Approximately, that right. We were, we were told to go outside Goldsboro and then when we got those samples we had to go, see we were out side, team Charlie was at the marina, right at the edge of the river and their inverter didn't work, their air sampler didn't work, and their SAM-2 didn't work so we had to go take all their, you know, we had to go back them up.

YUHAS: Team Charlie, did when you checked out that kit did you find that the inverter did not work?

EGENRIEDER: Well, no the inverters we didn't even get to, ok, because. . .

YUHAS: Did you check out the air sampler, did it work?

EGENRIEDER: Yes, I think it was just the fact the inverter, the inverter might have been bad, in fact he might not even know how to use it, you know, we just went and took our sample and then left to our next destination and just left them behind, you know, because we thought they were gonna go back to the plant.

YUHAS: Did you take the, well they hadn't collected any air sample right?

EGENRIEDER: No we went and got one.

YUHAS: Ok you got it . . .

EGENRIEDER: We got it where they were, we just took over their position.

YUHAS: Could you tell us a little bit about your training with the SAM-2?

EGENRIEDER: I think it consisted of one day, and a just real rush affair, you put this button in this position, you know, follow the procedure and that was about it.

YUHAS: Was was there a copy of the procedure, of the emergency procedure that you took?

EGENRIEDER: Yes, yes.

YUHAS: Did the procedure work?

EGENRIEDER: Well, I'll put it this way, we got, we got counts. I was not, I wouldn't say it worked. You know, you just set it up the way it says and you press the start button, you saw counts register, ok, but like I said the earlier, you know, one time you press the button, you get nc background, the next time you get a couple thousand counts background, so you know, personally I didn't think they worked at all.

YUHAS: Under what principal does the SAM-2 instrument or SAM-2 detector work?

EGENRIEDER: Well, they had it set up, they use a Barrium 133 standard and they're suppose to be, I don't know they have a threshold and a the window I guess, the threshold is supposedly right at the peak of barrium, instead of, you know, the factorys set it up, and the window monitors right around the peak, you know, I don't really know exactly the theory behind it, and supposedly all you're seeing is the 364 peak which would be the iodine 131 peak, but you know, as far as we saw what. . .

YUHAS: In your training was it covered, the effect that a background due to the noble gases would have on that detector?

EGENRIEDER: Well they told us in training that it wasn't, could really shield out the noble gases by setting the threshold at 364 and the window right around it, you know. . .

YUHAS: Who provided this training?

EGENRIEDER: I really couldn't tell you.

YUHAS: How long ago was the training provided?

EGENRIEDER: About two years. Right after we got this, the emergency kits.

YUHAS: Since that time, have you or anyone else collected an air sample, gone out and taken a SAM-2 and counted it just to develop a familiarity and a sense of self-confidence in the instrument?

EGENRIEDER: No, never. All we do, is I think it's once a quarter we, we bring the emergency kits back to the lab. We set them up and run the, you know, expose them to that barrium 133 standard and check the efficiency, make sure you're getting roughly the same counts that it says you should be getting.

YUHAS: When you were taking these readings in the field, did you have any great confidence in the readings?

EGENRIEDER: No, not really. No.

YUHAS: What was the highest air sample that you attributed to iodine, based on the SAM-2 count.

EGENRIEDER: Oh, . . . I kinda think it was the one, the very first one we took, I believe had more, more counts than any of them, you know, more net counts than any of them. I believe, and I think if I'm not mistaken, after a while we didn't even bother counting them on the

SAM-2, you know, we just decided we'll hold them and then we gave them to somebody else to count.

YUHAS: Were you told to do that, via the radio, or was that a decision you made based on your own experiences with it?

EGENRIEDER: I think, I think I called into them, I know exactly where we were, we were up on Peck's Road overlooking Three Mile Island and we were just, we were told there to wait for further instructions. We had gotten our air sample right around 441 and the they, they would ask to give us a location outside the plume so we could go and count it, so we, you know, they told us to go there and sit there and wait for further instructions. So meanwhile, we just took the SAM-2 out of the truck and set it up and left it warm up they say you should wait, let it warm up for fifteen minutes before you use it, ok, so we left it sit there and sit there and sit there, and then we did counting, and we got nothing. So I think it was then I called him and said well I don't really believe, you know, I don't believe the SAM-2 is working properly, so I, I gave all my samples to someone but I forget exactly who, oh ok that was right before our, our relief, and what did I do. . . I brought the samples back to the observation center and gave them to somebody but I have no idea who it was. It was one of our foremen.

YUHAS: Was there an alternate counting capability, for counting air samples for iodine?

EGENRIEDER: The only one I knew of was the one, I guess the state had a GeLi somewhere, the one where the helicopter was flying to, that's all, because all, at that time all our GeLi's were kaput because they were, you know, in the high background areas.

YUHAS: Alright, about five o'clock you returned to the plant and you went to the Unit 1 control room, excuse me. . .

COLLINS: Let me, before we move on from this early morning, early morning activities, you mentioned, I think earlier that you had provided some of your samples to a helicopter to be flown to Holy Cross Hospital?

EGENRIEDER: There was, there was one, I'm trying to, I can't remember which one it was but they told us, ok, they were going to send it, it was right after the Geyes Church parking lot, they said they'll send a helicopter over, we were suppose to give him, give him one of the samples so they could take it off for analysis but I can't remember which one it was.

COLLINS: Who's helicopter was this?

EGENRIEDER: At that time it was the State Police helicopter.

COLLINS: Who was on the helicopter from TMI, or was there anyone?

EGENRIEDER: Yeah, it was one of the guard sargeants. The newest one, now I don't know which one it is. It's the one that they, they brought in off the street and made him a sargeant, it was him. I don't know his name.

COLLINS: Did you provide any more than that one initial sample, either at that time or any later in the day?

EGENRIEDER: I believe that was the only one we sent, that one. I kinda think it was the very first one we took over there in Goldsboro, you know, the one where were got the appreciable amount of counts on it.

COLLINS: And you don't recall what that number was, for that sample?

EGENRIEDER: No, I have no idea.

COLLINS: Were you keeping any log or written record, your results. .

EGENRIEDER: Right, we, we gave in, when we called our results to the ECS we gave them the dose rate and then we gave them the efficiency of the machine and then the net counts per minute, ok, we didn't figure out the micorcuries per cc and I did keep all that. I kept that and the charcoal filter that we drew during the day and while we were at

the Middletown Swim Club it was suppose to be a low background area and we were getting like thirty-thousand counts per minute on the SAM-2, so I took some smears in that area and I gave all that stuff to the foremen in the observation center when we came back and you know, I have no idea what happen to them after that.

COLLINS: And you don't recall who the foreman was?

EGENRIEDER: No I don't.

COLLINS: Have you seen any of these records since the incident?

EGENRIEDER: No I haven't, none.

YUHAS: I got you going back to the Unit 1 control room now, and you made a statement earlier, you said, " No one seemed to know what was going on.", can you amplify that a little bit for us?

EGENRIEDER: Well, I guess it was Tom Mulleavy was there at the time in charge and like he just went back and forth, he didn't really have the time to sit down and explain to us exactly what was happening, you know, it was just go do this, go do that, you know. We didn't really understand exactly what had happened, you know, like at the time I wasn't familiar with the radiation levels in Unit 1, you know in the HP area and stuff like that. In fact it wasn't until I came back to

the control room at five o'clock that I had realized the ECS wasn't in the Unit 1 HP lab anymore, you know. It was just that, I guess it was a lack of communication because everyone was just so tied up with, you know, with everything else. We just like stood around like dummys, you know, until someone needed something.

YUHAS: In the Unit 1 control room did you, were they on masks at the time, was there high air activity in the Unit 1 control room?

EGENRIEDER: Let me see, when we, if I remember correctly when I first got there we were all in masks and then somewhere during the course of the time they called over and said he had got the results of the air sample and it was ok to take them off. It was strictly xenon. So we removed them, but then once you got outside the fourth floor at the elevator you had to put them back on to go into the turbine building.

YUHAS: While you were in the control room did you go over and look at the radiation monitoring panels?

EGENRIEDER: Yeah, yeah that's when I was aware of the ops building, I guess it was RMG, RMG-4, I guess the one in the hot machine shop and then the one's in the nuke sampling room, and stuff.

YUHAS: Did you look at the radiation monitoring indication for the control room air?

EGENRIEDER: No I didn't.

YUHAS: Are you aware. . .

EGENRIEDER: No, cause I couldn't get, you know, I know just from like looking standing behind the panel, you know, back as you first come in I, I can recognize the G printouts, you know, which modules are for the G monitors, but like the RMA's I'm not sure which one's they are. I have to go up right at the strip chart and look, and at the time I didn't wanna go past the lines, you know, because there were just too many people up there.

SINCLAIR: We're going to break to change the tape at this point, the time is 7 p.m. eastern daylight time.

SINCLAIR: This is Sinclair again, the time is still 7:00. We're continuing the interview with Mr. Egenrieder.

YUHAS: Could you describe for me the Unit 1 control room air monitoring system?

EGENRIEDER: Well there's RMG-1 which sits right behind the shift foremen's desk and then the only other one there is is the RMA-1 which is the atmospheric monitor for the entire control building, that's, that's it. Oh, no, they did have a, they had a low volume continual air sampler going at the time.

YUHAS: Could you describe the RMA-1, where it takes the suction, and what indications can we draw from it?

EGENRIEDER: I believe it the, it's the inlet before the filters, I believe. I don't exactly know, you know, like we got no training at all on the atmospheric monitors.

YUHAS: Do you know what indications RMA-1 can provide?

EGENRIEDER: Right. Particulate, iodine, and gas. You know, if we get an increase what we do, we just go to the sensitivities, you know, and you take your counts per minute and divide it by your sensitivities and you come up with a cc, a micro-curie per cc type.

YUHAS: When you were put on masks, did anyone explain to you why you were on masks?

EGENRIEDER: No. Well I walked into it while we were already in masks, ok and I just took for granted that it was you know an iodine problem. Yet I was pretty cautious because I saw some NRC people walking around in half-face respirators, you know.

YUHAS: What type of filters were on the, on the masks that you were wearing?

EGENRIEDER: We had the iodine charcoals.

YUHAS: So, this, by the night of the twenty-eighth, someone had provided the iodine cartridges.

EGENRIEDER: Well, I think it was even the twenty-seventh we had some, didn't we have some that day?

YUHAS: No the twenty-eighth was the day . . .

EGENRIEDER: Oh yeah, ok right, the twenty-eighth right, excuse me, right. I'm pretty sure because, I think that's when we picked them off at the north gate as we came in everybody had to have one, when they crossed the north gate area.

YUHAS: Ok, fine. But you, you're not familiar enough with the system to go over and understand what the readings are?

EGENRIEDER: I don't know exactly what you mean, I mean I could go to the strip charts and say ok, well, you know, here, . . .

YUHAS: What my curiosity stems from is that apparently you had a noble gas problem, now if someone had done half lives to show it was less than 2-hour a half hour you had the control room or the control tower building air monitors, did anyone go over and look to see if the iodine channels were above the alarm set point for wearing of masks?

EGENRIEDER: Well I really, I couldn't tell you that because like I say, when we got there they were already in them and I think it was Ken Bryan, the shift supervisor, was standing there at the monitors taking the readings off of them, but you know I just, cause I was only in there a couple minutes when they came out through and said, well no maybe a half hour, when they came through and said we could remove the respirators.

YUHAS: You weren't in the control room very long, at 1900 you stated that you were sent back out on another environmental monitoring survey team.

EGENRIEDER: Right, We just, we just were told to go in an releave the guys so they could come out and eat, cause they had been in there all day.

YUHAS: Ok. Did you assume the team Bravo responsibility again?

EGENRIEDER: I really couldn't tell you what, what team it was. I know, it was our chemistry foreman was on a team by himself, and he was getting tired so he requested to have someone go along with him, you know, because we were going to be out tracking the plume, so you know, they assigned me to it. I have no idea what. . .

YUHAS: Which chemistry foreman?

EGENRIEDER: Ed Houser.

YUHAS: So you and Ed Howser went out 441 to through Lower Swatara Township.

EGENRIEDER: Right.

YUHAS: What instrument were you using when you got the 13 millirem per hour?

EGENRIEDER: I believe we had a PIC, I know we had a PIC-6, because it was the same kit that I was using earlier, and I think Ed Houser had an E-520 and they both jived.

YUHAS: Do you have any other questions before he went home that night?

COLLINS: Yes, you mentioned that Ken Ryan wanted you to take, wanted you to take a Unit 2 letdown sample. . .

EGENRIEDER: No, it was a Unit 1,. . . .

COLLINS: Unit 1?

EGENRIEDER: Unit 1 letdowm. They wanted it so they could go into decay heat, they wanted to know what the boron was.

YUHAS: That's, that's on the twenty-ninth now?

COLLINS: Was that the twenty-ninth?

EGENRIEDER: Right. This was the twenty-ninth when we came in.

YUHAS: You don't have any other questions. . .?

COLLINS: Not on the twenty-eighth.

EGENRIEDER: I should, maybe I ought to point this out, the place where we got the 13mr, we didn't, we didn't really think, we got the reading and right away I said to Ed, I said well let's go into Shopes Gardens and check out in there and see if it's any higher. So we went around there and came back to the point where we were gonna get an air sample then, but it was gone, we couldn't find it, so we know, we just kept tracking around the area. We couldn't find any dam thing, the highest we got then was 6mr.

YUHAS: Ok, fine. So you went home about midnight on the twenty-eighth?

EGENRIEDER: About twelve-thirty, quarter to one.

YUHAS: Ok. And you returned about 0900 the following morning?

EGENRIEDER: No seven, seven o'clock.

YUHAS: 0700 the following morning. Ok, what was the condition in the Unit 1 control room at that time?

EGENRIEDER: Who was it? I guess Bob McCann was the foreman there, and you know, he was just like running around, you know, answering this phone an picking up you know, and once again, you know, we were just standing around waiting for, you know, for instructions and that's when Ken Bryan came over to us, you said that. We were just sitting there mostly watching the, I think it was Bev Good was there at the time taking the readings from the Environmental Monitoring teams and we were just looking to see what calculations they had.

YUHAS: Mr. Collins you had a question on on what else?

COLLINS: I was going to ask, you indicated that you told Mr. Bryan you would not take a sample in the sample room, what were the indications, what data did you have available. . .

EGENRIEDER: Well we. . .

COLLINS: . . . that lead you not to want to go to the sample room?

EGENRIEDER: Well we heard through the grapevine that the sample cooler for Unit 2 was reading 75R, ok, and we heard it was reading like 3R general area, and I knew what was involved, you know. The fact that you had a valve in, you know, make sure the valve lineup was right for Unit 1, you know. You had a stand there right over that cooler and I was not gonna be subjected to that, cause you know, not when I could go out into the aux building and get one.

COLLINS: So you did not have paper copies of surveys to review to come to that conclusion?

EGENRIEDER: No, at that point, no. Cause they probably were down in the HP lab and we were in the control room.

COLLINS: Do you know who took over that project after. . .

EGENRIEDER: Well, it, the project, you know, once we discovered that we could get it all, get it down at the RML-1, it was just dropped until they got that, I think it was the "B" bleed tank, until they got that cleaned up. Because they said we'll sample them both at one time, so meanwhile we had gotten relieved, and I was up in the helicopter

and came down and was out in the TLD's and I think the next time I heard anything about it was when Ed Houser brought his badge over to me and said read this.

YUHAS: I might point out that that was the Unit 2 letdown sample that Howser had taken.

EGENRIEDER: No, I think they had gotten both of them that day, I think they got them both at one time.

YUHAS: You're fairly confident. . .

EGENRIEDER: I'm. . . .

YUHAS: ...that Houser also took a Unit 1. . .

EGENRIEDER: I'm. . . .

YUHAS: . . . letdown sample?

EGENRIEDER I'm positive that he got a Unit 1 sample, because I couldn't believe it. I said where did you get it and he told me. I said you gotta be kidding me. I said we had it all planned out, where to get it. In fact there was two places, one of the aux operators was there we were talking about he said you could get it right off one of the

makeup transmitters, its the same line, he said you coulda got it off of that which is in the 281 level of the aux building.

COLLINS: Which operator called this information to your attention?

EGENRIEDER: It was Roland Baynard.

COLLINS: This is after the fact though, at the observation center. . . .

EGENRIEDER: No, this was, this was before this was in the morning you know when we had reviewed it, about RML-1. He came in to us and said well if that doesn't work you could get it off of the makeup transmitter.

COLLINS: This is then after 0700. . .

EGENRIEDER: Right.

COLLINS: . . . and this is Ken Bryan who is on days or was or was he leaving from the night shift.

EGENRIEDER: I really couldn't tell you that, ok, I have no idea what shift he was working all I know is he came up to me. . . it was me and Mike Kuhn, he addressed both of us, and said let's go do it, you know, we need one and I said no way.

COLLINS: There appears to be a. . . . it appears at this point you were taking instructions from the operations people directly, it that a correct assumption, there does not appear to be a foreman in here anywhere.

EGENRIEDER: Well Bob McCann was there but you know it's just like normal routine, we always answer to the operations. . . you know. If they want something they get it, you know, it's just the way it is.

YUHAS: Let me make this clear, Houser told you personally that he had taken the Unit 1 letdown sample at the nuclear sample room?

EGENRIEDER: That's a fact.

YUHAS: Ok. . .

EGENRIEDER: I'm almost positive of that.

YUHAS: The reason why we're making such a point of this, is this is contradictory, and it's certainly new information to us. We have been at a loss to explain some of the exposure that has been involved, for instance the difference between exposure to Valez and How and Houser took when they drew the Unit 2 letdown sample, Houser had taken significantly more, and this was the first indication we have heard that Houser may have gone in and taken the Unit 1 letdown sample, sometime during the day.

EGENRIEDER: Well, no I was under the impression that all three samples were gotten at one, ...well I shouldn't say, both the letdown samples were taken at one time from what I understand.

YUHAS: Ok, and Houser, Houser told you that?

EGENRIEDER: Right, cause in fact, the other day I was talking to him about it and I said well you know personally I don't think you got yours,. . . . I said you did, you drew the samples right, and he said yes, and I said well I don't really think you got your exposure from Unit 2. I think you got your exposure when you went over to Unit 1 and did the valve line up, cause the sample coolers and all the valves for you know, the lineups are right on the same wall I said that's where I think you got yours, cause Unit 2 sample was lined up the right way because they had put it on recirc right at the trip cause we had to surveillance it, you have to get the sample, so that was lined up properly. So all you have to do is really open up, I guess the CAD 6 and 10 and the valve in the sink and you coulda got your flow from Unit 2. But, I'm almost positive that he gave them the boron number for, you know, Unit 1's letdown at the time, cause then he also said that they got the, they got the bleed tank sample down in the aux building.

COLLINS: So in addition to these two samples from primary sample room, Houser said he also was involved in taking a "B" bleed tank sample that morning in the aux building.

EGENRIEDER: Well, it would have been in the evening.

COLLINS: That evening.

YUHAS: For the record is that was Unit 2 bleed tank?

EGENRIEDER: No that's Unit 1. That's the tank, it's either the B or the C, that's what they were going to use to makeup to the letdown when they went on, when they went on the decay heat in Unit 1.

YUHAS: Ok, very good, thank you. Ok, that evening you went back out on environmental surveys, is that right, that day actually, that was the day still?

EGENRIEDER: Yeah this was the day, this was, right. . .

YUHAS: Friday the twenty-ninth, and you stated to us that you did a helicopter survey, initially with a meter that read 3r ten feet above the stack.

EGENRIEDER: Right.

YUHAS: What meter was that?

EGENRIEDER: An R02. . . R02A, I believe it was, the R02A.

YUHAS: Can you describe the methodology of taking the sample, were you seating in the helicopter, with the meter out the window, or was it on you lap, or. . . .

EGENRIEDER: No, I was. . . .

YUHAS: . . . Open windows, closed window?

EGENRIEDER: Well. . . . I'm trying to think, we, we worked our way over and I was doing a, I was doing a closed window the whole time. It was the helicopter that they took the door off on the passenger side, so I just held out my arm out the whole time and I think when, when I. . . . until I found the plume, ok, the direction the plume was coming from, like we just kept circling around, you know, like the reactor building area until we found the direction, and then once we zeroed in on the direction it was coming we inched our way over towards the plume until I got the highest reading and then I did open and close the window. . . . I think it was almost, approximately the same. I can't, I can't remember I didn't write it down, I called the readings in as I was getting them, over to the ECS.

YUHAS: What effect do you suppose an open window reading on an R02 would have if you had air blowing on the instrument?

EGENRIEDER: Could you say that again.

YUHAS: What effect would, for instance a relative motion of either the helicopter blades creating a downdraft or just holding the window out and air blowing on it, on the end of the R02? Were you holding it so that the. . .

EGENRIEDER: I was holding it, I was holding the meter down, so that the detector was shining right on the, right at the stack.

YUHAS: Right at the stack. . .

EGENRIEDER: Right at the stack, right.

YUHAS: Ok. Was the helicopter relatively stationary there?

EGENRIEDER: Yeah, well it was, yeah cause like we were in the, I couldn't believe I kept saying, were not moving, we were just perfectly still, just hovering right there, you know.

YUHAS: And was there a lot of turbulant air from the rotor blades?

EGENRIEDER: It didn't seem to be, no.

YUHAS: Very interesting. And about how long did you take the reading?

EGENRIEDER: Well we just, we just kept going around you know, I don't know I just held it out there for maybe ten fifteen seconds and got the reading and then we got out of the way you know, and then we just kept circling you know, it was weird because you know, the direction just kept changing all the time one time it would right west the next time it would be east,you know, it was a hard, hard thing to track and then finally we started, you know widening the circumference of our search and we finally ended up going northwest. Right between the Unit 1 cooling towers is where this plume went. So we proceeded in that direction up towards. . . I guess we went into Royalton and they chased us up to Highspire and check out up there and then we just kept, you know, circling the area.

COLLINS: Who's helicopter was this at this point, do you recall?

EGENRIEDER: It was the one from Gettysburg, it was the one. . . . I think, I don't know if they're still using it now, it's the little white one, the real little one. I don't even know who's it was.

COLLINS: Was there anyone else in the helicopter from TMI?

EGENRIEDER: No at that time it was just me and him.

COLLINS: Thank you.

YUHAS: I think we're gonna need to talk to you somewhat at length about the TLD system. Right now we understand that later that evening Mr. McCann asked you can you help set up the TLD system, which was apparently in a state of disarray upstairs, in the, in the center. Let us begin by asking you when were you trained to operate the TLD system and by whom?

EGENRIEDER: Well I guess it was. . .well I have no idea how many years ago it was we got the TLD system in, but I know it was I know we were just toying it the whole time we had film badges and stuff, for any of the experiments. I believe it was all, all the training we really got was like just like on the job training working with Mike Buring, exposing the TLD's, reading them and doing beta corrections and things like that on them. I don't want . . . And then one day we did have a training session and all it consisted of was Tom Mulleavy coming in to the TLD room with the procedure and reading it over with us and that was the training that we got: the official training. And that was it, you know and like, I had not worked a TLD reader for approximately, I'd say a year and a half, you know since, you know, before this accident, you know once in a while we would go down just to read you know, if someone's dosimeter went offscale we'd just went down to read it quick, you know. Because it's really, it's hard to forget how to really operate it . . . . I think whats the hard part, its easy to forget the documentation you have to make.

YUHAS: When you went upstairs were there copies of the operating procedures for the TLD reader?

EGENRIEDER: No, I didn't, I didn't see one, I really didn't.

YUHAS: So you were relying on your memory from a year and a half ago on how to operate the device?

EGENRIEDER: Yeah, and that just like I say, the routine. . . once in a while you have to go down and read it, ok, I know to turn the nitrogen on, do the background and sensitivity checks, and you know adjust the high voltage accordingly to make sure you get the recent sensitivity.

YUHAS: Ok. Alright what was. . . can you describe the condition of the equipment when you came on the scene and the number of TLD's, about.

EGENRIEDER: Well, I would say approximately every TLD we had to our name was just laying there in different bags, a bag here, a bag there, everything, you know, and I think the first thing I started to so was sort out the ones that had been in the TLD trailer, you know, actually the permanent badges that had been assigned for April, you know. They were sitting there ready for issue, they, I started to rezero them.

YUHAS: Was the reader already set up, was the nitrogen on, had it warmed up?

EGENRIEDER: Yeah, some people had read them, there was, there was a header there where some people had read their badges for the day, you know. I don't know who it was that read them, I presume it was our technicians that were up there reading people's TLD's.

YUHAS: So the machine was already fired up. . . .

EGENRIEDER: The machine, the machine was set up and there was a header out there, you know, with some readings on it, but like, I have no idea who's readings they were or anything.

YUHAS: Who was authorized to read TLD's?

EGENRIEDER: Any HP technician or junior.

YUHAS: Would you say that you have received more or less training than other individuals.

EGENRIEDER: I would say I received less. There is certain people that have get, you know they seems like everytime it comes around they're working the TLD program. There are just a select few that always get it, you know? I mean, we only really work there once a

month, you know, right at the initial change and you know, that guy does it for the, it usually takes like maybe 10 days, by the time you get all the TLD's you read them. You read all the visitor badges, you know, you put them in new holders, then you go out and calibrate your badges for next month, expose them to 100 mr and you just set up your machines and stuff. So it's usually always one person when you're on a six week rotation, you know, you don't always, you're not always available on HP on that first week in the month.

YUHAS: Do you ever do blind quality control checks, where someone exposes, say twenty badges and then give them to you to read?

EGENRIEDER: I know, when we first started the program we did, ok, and now all I know is that we, I think its 10 badges we expose to 100 mr and then we read 5 of them and we send the other 5 to Hartshaw and then they read them to verify our, you know, that we were using 100 mrem standards.

YUHAS: So, go ahead a pick it up with what you're doing now upstairs in the observation center?

EGENRIEDER: Ok, well we went up there once again it was me and Mike Kuhn were the only two people that volunteered to stay to help out and I guess we were there about ten minutes and they came up and pulled Mike off of it to go down to the 500 KV monitor down there. So it was

just me, and I just sat there the whole night mostly doing zeroing you know, the badges we had to start issuing in April and stuff and once in a while people would come up with their badges to be read so I'd have to stop what I was doing and type in what I was doing and you know read their badges. So I guess that lasted most of the day and then I. . . . most of the morning, and then I started reading badges that had been brought over during the course of the night, you know. I just kept doing it in sections, like I'd read, you know, I'd zero some then read some important ones then I'd zero some more I just did that on and off all night, but there was no, there was really no system at all to go by, because no one, you know, everyone seemed to forget about the TLD program, you know until the last minute. So we started a system where, I said well just let's issue them every night, we get all the 100,000's and all the 200,000's and you know at 11:00 we'll just change them, we'll take all the ones that haven't been issued and put them back in the box, and then stick the fresh, the next series out for people to pick up and that system seemed to work pretty good, you know. That way if I got a 200,000 series in one day, I knew it had to be read, because you know, it was an outstanding badge. It seemed to be working alright, and then you know someone went and changed that they started issuing the same badge and having it brought in and read. But I guess the whole, this was the first whole day all we did was zero badges and then Dave Luski came down from Reading. I think it was Reading, I don't know. He's, a I don't know if he's GPU or Met Ed, Reading. I forget. But he came down and

we started to tear apart the program you know, so that we could you know, read the TLD printout sheet and start applying it to the persons' form five so we could get a rough idea on what the operators and stuff who were getting some doses, to try to keep track of exposure, but the bad thing about that is he was up at Crawford and I was down at the observation center, you know. There was just no communication between us, you know, it was really rough, so then finally later that night then they did bring him down there and we started getting things ironed out and when I had left at seven o'clock in the morning all they had to do is feed the adjustments into the computer and we would a an updated Form 5. That's the impression I was at when I left. Because everything, you know, all the TLD'S had been read, I had left just a couple of them had to be put back in their holders but everything was up to date when I left at seven o'clock Saturday morning.

YUHAS: Who read Houser's TLD?

EGENRIEDER: I did.

YUHAS: And do you remember what it read?

EGENRIEDER: It was either three or four, you know, I think it was close to four but I'm not really sure anymore.

YUHAS: Did you also read Valez's?

EGENRIEDER: No, Pete did not bring his over.

YUHAS: Did you permit other technicians to read their own, fellas that had large exposures?

EGENRIEDER: No, I was strictly the only one reading them that night, no one else came up, like I said no one else would support me, you know. I was up there all by, all by myself the whole night and just occasional people would come up and say could you read this I want to see what I got, things like that, but I know at the time I asked Ed where is extremity badges were he didn't have any, because I wanted to get them read too, he didn't have any. . . .I think it was the same night Doug Weaver had called over and asked me what his results were I couldn't find them. It was just, it was just totally disorganized, like people would just put a TLD in and walk away, you know. There was no typing on the printout to verify what the hell was going on, you know so you could just take a quick glance and see what it was, you know you had to go searching through all the little numbers. But I'm pretty sure it was that night that Doug called and asked me what his exposure was and I couldn't give it to him.

YUHAS: Ok fine. Doug do you have some questions?

COLLINS: At what point did the tapes that were being generated, at what point were they transferred so that dated Form 5's could be generated, could be used? Was that while you were there?

EGENRIEDER: Well as I, as I proceeded during the night you know, if I was reading a bunch, just zeroing a bunch of them, ok, when I started to read some permanent badges that you know had meaning on them ok, I would stop my tape and start a new one for you know, the serious work, ok and like, when I left on, on Saturday morning I was under the impression that they were gonna go and put it right into the computer that night. In fact we did get some Form 5's late that night, it would have been late Friday night, we did get some Form 5's out of the computer but they needed adjustments made because, like the way the issued the TLD's the first two days you know, anybody I think it was the guards at the North Gate were issuing them and you had no control as to who had what badge,ok. So we had to make all those adjustments to the best, with the best way we could. We had to go through the logs and find out who, what badge went with what person and stuff like that.

COLLINS: Were you able to determine who was assigned all badges during that period of time or were there any left hanging?

EGENRIEDER: Well, I think, I think really from the most part we had like several people assigned to the same badge, we didn't have any

badges that didn't have people but we had a hell of a lot of people that had the same badge. So if I'm not mistaken, I believe they gave you know, the same dose to everybody.

COLLINS: Where, during that period where were the tapes being inputed to the computer?

EGENRIEDER: As of Friday, late Friday night, Bill Herman was coming over into the computer office there in the service building and doing it, cause I remember he was in a respirator all the time doing it.

YUHAS: At this time I'd like to go ahead and just talk about the Health Physics Program in general here at TMI, and maybe some of the problem areas that we may be familiar of, and get your input on it,. . . .first let's talk about training. In the last two years, how many classroom lectures in the area of Health Physics have you attended at TMI?

EGENRIEDER: In the last two years, I would say none. We did have one, we had an emergency drill. A medical emergency drill with RMC and I was involved in that and we went throught the, the guy from NRC just went over a few facts with us, you know, what to do and where to go and how to prepare the hospital and stuff like that, and we went through the emergency; we came back and had a critique and then it was dropped, ok. That was the only formal HP training that we got.

COLLINS: You said the man from NRC. . .

EGENRIEDER: I mean RMC, RMC.

COLLINS: Thank you.

YUHAS: All the including you record indicate that in 1978 you received 24 hours of startup training in health physics for Unit 2, what was that?

EGENRIEDER: I have no idea what they would be talking about. I think a lot of their training records are saying ok if he can do this he's trained, you know what I'm trying to say. . . .

YUHAS: In the training computer printout there are hours accredited, ok? For instance, there's a notation in there about the medical emergency training and they put down so many hours of classroom training, now there is a statment that say's you received 24 hours of training for startup of Unit 2, in the fall of 78 by November or December of 78, to the best of your recollection were you provided with any refresher courses in health physics at that period of time?

EGENRIEDER: You know, the only thing that we, the only training that I can really remember is like you know, that general employee training that GET. Where you go in and you listen to security, you listen to

QC talk and you get the respiratory protection bit, and then at the end of the first session they always give the HP the HP test, ok, cause what it is the first half of the day is strictly for the. . . I think they call the bullshit and then go down into the basic health physics for the afternoon session so they always wave our basic, you know, what they do they give us our test after the, after the morning session if we pass it, they say ok you don't have to go. But it's the same test every year.

YUHAS : So in the last two years have you sat through even the most fundamental of general employee health physics training?

EGENRIEDER: I would say no, I can't really remember . .

YUHAS: You passed the test in other words and . . .

EGENRILDER: Right, we passed the test, right.

YUHAS: Ok.

EGENRIEDER: You know, you get the same trick questions again every year.

YUHAS: Have you ever reac the Technical Specifications for this plant?

EGENRIEDER: No.

YUHAS: Do you know where a copy of the Technical Specifications might be found?

EGENRIEDER: Well over in the control room and I believe we have some back in the Unit 1 chem lab too, but like, once again with the workload we have you can't really, you don't really have time to do it.

YUHAS: Can you describe the shift orientation and the phrase "training shift" and what that means?

EGENRIEDER: Well what it's suppose to be on the six week rotation, your first week, when you come off eleven to seven you relief and then your next week of eleven to seven, I mean, the next week of daylight your training week and then originally it was set up that you would get five days of training, ok but that fell by the wayside a long, long time ago. In fact as soon as it got started and I think really the only people that take the trainings seriously was our two chemistry foremen Kerry Harner, well I guess three, Kerry Harner, Ed Houser and Ken Frederick. They, once in a while they would review us on, they reviewed us on polishers, the polishers over in Unit 2, maybe that was the startup training that we supposedly got. I cannot remember any HP Unit 2 training. In fact the first week I was over in Unit 2, I was lost. I had no idea what anything was, you know, no idea because I

was never exposed to Unit 2. The most exposure I got to Unit 2 of health physics was back in I guess 1977, when we looked at the floor prints and made up our survey maps, and then we just were allowed to to walk through the Unit on our training week. We were allowed to walk through the Unit to you know visualize the cubicles so we could go back and draw them from the floor prints.

YUHAS: Do you mind if we ask you a few questions, technical questions, to just get an idea of the strenghts you have based on your own review that kinda thing.

EGENRIEDER: No, go ahead I know . . that.

SINCLAIR: Let's break at this point to change to the second tape. The time is 7:30 p.m.

SINCLAIR: The time is 7:31 p.m. and we are continuing the interview with Mr. Egenrieder.

YUHAS: Mr. Egenrieder, we were just about to talk about a few technical points to try to get a feel for where you stand in terms of technical confidence primarily as a barameter the training program that you indicate you have not been provided. Do you know what Xenon-133 decays by?

EGENRIEDER: No I can't really say I do.

YUHAS: It decays by a beta and about an 81 kev gamma, okay. Can you describe or which instrument did you use most frequently or was used most frequently throughout this incident for measuring high dose rates.

EGENRIEDER: For high dose rates, well the only really surveys I did was the environmental type surveys, and they were the PIC-6's. Usually we use RO2's, that's our basic instrument.

YUHAS: Okay, how about teletectors? Do you use teletectors?

EGENREIDER: Well we use them but I try to keep away from those things cause I don't have any faith in the people that calibrate them. Unless I actually take it down myself and calibrate it. I have no faith in it.

YUHAS: Do you know what type of detection principal teletector uses?

EGENRIEDER: I, its a Geiger Mueller I think, but I haven't really you know. I am not up on that at all, to be perfectly honest with you.

YUHAS: Do you know what type of detection medium RO2 uses?

EGENRIEDER: It's a [illegible] amber.

YUHAS: Okay. How would you suppose the teletectors would respond to an 81 kev gamma ray as compared to the RO2 ion chamber?

EGENRIEDER: I don't think the teletector would really see it because of the shield or the end.

YUHAS: Okay? How many GM2s are in the teletector?

EGENREIDER: Just the, I think, I think there is one I believe. It's up at the tip. I know that the high pot, you know the one, the pot for adjusting the high range is up on the tip, and I think there is only one detector up there also.

YUHAS: Can you describe the biological effects to an individual who has received a whole body exposure of 300 rad?

EGENRIEDER: No not really. I know what 500 is supposed to be, almost certain death but, no we had that, we had that in Dick Bowers training. That was the last time I had a dose, back in 74.

YUHAS: Can you describe how the TLD chip measures radiation?

EGENREIDER: I think it is the electron reacts with the chip and excites the electron from the ground state to a certain energy level and then, you know, when you read it the reader puts it back in to the ground state and it measures the light that it gives off as it goes back to the ground state. That's really all I know. That's the basic training that we got on that.

COLLINS: - I would like to ask you a couple of questions back on the basic elements of training. How did you become aware, and what kind of training were you given in new procedures and revised procedures.

EGENRIEDER: Well when we first came down on the job, I guess during our probationary period, we have a little session every afternoon where they bring a down couple copies of the procedures and give them out and read them over with us, ok and that was it. That was your training on procedures. As far as revisions go they use to post it in the HP Lab in the chem lab whenever there is a revision to a procedure they post it on the bulletin board so you know these procedures have been revised, please read, but that fell by the wayside. Now the clerk just comes down and puts them in the file and takes the old one out.

COLLINS: How are you made aware then that a procedure has been revised if it only placed in the file.

EGENRIEDER: Through the grape vine. Really there is several, lets see which one was the one we just, there is one no one realized that had been revised, well the good one is the, I guess it is 1618, the shipping of radioactive material. That one the criteria for yellow two and yellow three sticker had been, I guess the criteria for yellow three sticker had been changed from I think it was 10 mr three feet to ... no, I mean on contact to 50, and that I didn't know for awhile and in fact I had made up a tape on our little Packard calculator to figure out the curie contents and stuff on the compacted trash drums that we sent out and it was a couple weeks after the revision had come out that Tom Mullavey came up to me and said hey would you change this tape to reflect that, and I had no idea what he was talking about and then just during the accident I found out that it was revised again to include the what's it called, the transport index, I guess, on the sticker. It is supposed to be, now we just used to leave it blank and now we have to put the three foot reading, I guess it is. I had no idea that procedure had been changed until I heard it from somebody.

COLLINS: When you were transferred to Unit 2 how were you made aware of differences in procedures between Unit 1 and Unit 2 operations.

EGENRIEDER: Just through, you know, going out and searching the file yourself, reading over the procedures to familiarize yourself.

COLLINS: You mentioned in discussing previous drills, emergency drills that you had been given a one day training course on use of the SAM 2. Is that correct?

EGENRIEDER: Alright . . . that consisted of, I am not sure if it was Sid Porter or Len Landry that came back and showed us how to operate and went through the position switches and then it was, I believe it was the exact same day that we went up and we did the efficiencies on it, you know. We exposed them to the source, got the counts, figured out what the decay would have been on the source and figured out the efficiency.

COLLINS: Since that time had you participated in any drills in which you had to use the SAM-2 under simulated emergency conditions?

EGENRIEDER: I can't really remember if I was in the last drill we had or not. I know there was sometimes, it might have been once or twice but I know, the first, I guess it was the first time we had an emergency drill, they made it a point that everybody in the health physics department would be there for every drill, you know they pay everybody overtime, and then it got to a point where we only worried about the people who were there. Okay, if you didn't get training, that was fine.

COLLINS: During, or after a drill you are, you go through a period of critique I believe after every drill, this is correct?

EGENRIEDER: The foreman goes to the critique, the technicians never do. I have never attended a critique. I believe I was in the, I think I was in the last, in the last drill, I was on the onsite team. I believe I was.

COLLINS: Any time during or after the drills did you express your concerns over your training with the SAM 2 to anyone.

EGENRIEDER: I know as a whole our whole department, you know, will bitch about the fact that we need more training on it, because we didn't really understand exactly what they were doing, okay, and like if we would run into a real problem we would have no way to diagnose, you know, to see if it might have been something we were doing wrong. Okay, I just felt, we always complained about all our training, we say it is very lax, you know.

COLLINS: Are there any routines in the plant where you would be called on to use the SAM 2?

EGENRIEDER: Never.

COLLINS: Thank you.

YUHAS: Let me ask you one more question relating to training and that is can you describe the alternate methods available for control of high radiation areas or entry into high radiation areas.

EGENRIEDER: Okay, what we do, we're suppose to, I think 10 CFR 20 says any area greater than a 100 mr has to be posted as a high radiation and also locked, but I think we got, I think they gave us a waiver on that saying that we would, anytime we have a reading of greater than an R we lock it with a sign on it saying, you know, health physics supervisor must be notified before entering and the control room did control the keys to it. Now, now the Aux operator has the key to it on his keychain.

COLLINS: When did the change occur from the shift supervisor control of the key to the Aux operator?

EGENRIEDER: I noticed it during, I guess it was during this refueling outage, when we had to go like in the miscellaneous waste evaporator, you know, when we were concentrating on the waste water from refueling. The evaporator would get to over an R while it was operating and when we would have to go in there, they always said well the operator has the key. A lot of our gates, you know, the operators have the key to the reactor building cause all it is is a locked valve key so, I mean

we used to have very strict control of it, you know, entering the areas and also when they enter an area greater than an R an HP technician has to go with them.

YUHAS: Okay, lets talk about instruments for a little while. On the day of the incident are you aware if there enough suitable instruments to go around?

EGENRIEDER: I would say, I am not, you know, I couldn't tell you how many but since we had just come out of refueling outage I can almost positively state that there was very few instruments around because we went through the entire refueling outage, you know, just waiting for one instrument to come in so we could go out and do a survey and stuff. Our instruments, I think they've changed it now, they gave the contract to Rad Services I think to fix our instrumentation but before it was our instrument people were responsible for it and they just couldn't care less about it and we have two lockers up in HP area, you know, for instruments to be repaired and they are always full.

YUHAS: Do you know of any instance where an HP tech or individual may have been authorized to go into high rad areas greater than 100 mr per hour without an instrument because one was not available?

EGENRIEDER: Well I don't know where, I wouldn't really say that they were authorized, I would say I have known cases where the technician

just went in anyhow. I know Unit 2's reactor building they went in without the proper instrumentation and stuff.

YUHAS: - Was this at power?

EGENREIDER: - Yes.

YUHAS: Could you amplify on that a little for us?

EGNERIEDER: We'l, okay, I guess when we first started having, I guess the pressurizer was leaking over in Unit 2 and they always, you know, they would get loss of coolant, you know. Their, what am I trying to say, their leak rate test was always high so they would send in you know normally at 100% or 90% power they would send people in to check for leaks inside the D ring, you know, and they would always require an HP escort in there and I know one instance for sure the technician didn't take a remball in, for another time the guy took in a teletector, was it a teletector or an RO2, and it pegged and he told the guys okay we're not going any further, you know. He says I am not going with you, he says, you know it is greater than 5 R, it has to be an RO2 because he stated it was greater than 5 R and he said he was not about to proceed any further and they went anyhow.

YUHAS: Specifically, who was they? Let's talk about this incident with the RO2 pegged. Now who was the HP tech?

EGENRIEDER: Gees, I think it was Tom Thompson, the guy who left. I am pretty sure it was him and ...

YUHAS: When did this happen about?

EGENRIEDER: Oh gees, I couldn't tell you.

YUHAS: It was this year?

EGENREIDER: Oh yea, it was 1978, right.

YUHAS: 1978?

EGENRIEDER: 1979.

YUHAS: 1979.

EGENRIEDER: I'm a year behind.

YUHAS: Okay 1979 so that's less than four months anyway.

EGENRIEDER: Right.

YUHAS: Mr. Thompson went in with an RO2 and the plant was at power and he was accompanied by a licensed operators?

EGENRIEDER: I'm not, I think Dick Hoyt might have been in there, the shift foreman at the time. I don't know if Bill Zewe would have went in or, I don't know, there are so many, we made so many entries in that damn building under power, you know. It is unreal and we used to complain about that saying they used to send the HP people in once a week to do a daily survey and we kept saying, you know, why? No one really goes in there except maybe an operator would go, two operators would go down in the basement to take some readings once in a while. I said why must we go in every week and subject ourself to some dose and they just kept saying we have to do it, we have to do it. So I guess it was, oh man, I guess it was right at the beginning of Unit 1's refueling outage so it would have been the end of March I guess the refueling outage was over and, I mean started, and they sent me in and my junior into the Unit 2's reactor building

COLLINS: Excuse me, the inspector's going critical. (Lots of sneezing)

EGENRIEDER: I think it was the Saturday after our fueling outage started, I don't know what the date would be, the 25th or 26th of I guess March we started our refueling, I don't even remember, February I think we started our refueling but my junior and myself went in to the Unit 2 reactor building at full power to do our routine survey. We came out we had the remball in with us, we had, I guess, it was an RO2 we had with us, gamma levels were pretty low and, you know, it is also in our procedure that the health physics people have standing

permission to enter the top of the D ring at power to do a survey, cause when they want a survey they want the basement, the operating floor, the first floor and the top of the D ring only. So, you know, we go up every week to do that. The neutron instrument, you know, we walk through fields where they go flying offscale, you know, but it come right back on as soon as you keep walking so we came out and we read our dosimeters and I think I picked up 140 gamma and Dick picked up almost the same. So I called Tom Mullavey at the time and I says why in the name of God do we have to go in and subject ourself to this and he said we have to, we made a commitment to the NRC people that we would do it once a week. Okay, this is what was told to us so, I didn't think anything of it, meanwhile he told me to go down, you know, to take a break and then go down to the respirator booth and run some people through so when I went down there I said well since I am in the TLD trailer I might as well read my neutron TLD. I read it, I picked up almost 700 neutron. So then I called him up and I said hey now must we go in and I told him the problem - oh no we don't have to do it anymore, you know. So we questioned him and we kept questioning that day about it. Dick came down and read his TLD, he picked up almost the same thing so and we kept questioning to people and they said no we don't have to do that any more. I kept saying, you know, well, why did we ever do it in the first place, I don't know. And all of the sudden the story changed. So luckily, that same day Karl Plumlee came up and he was here to audit the QC department or something I forget and I went into the office and I started spouting off about

this neutron exposure that we received and I saw Karl sitting in the corner so I just kept it up, you know. Then he came back later that day and asked us what was going on so we told him and he came back the next Monday I guess and started a detailed investigation and everybody denied it, that they ever gave permission to go into the building, you know, to do these surveys, you know. They had no idea that they had the neutron problems and stuff, you know. However, our supervisor signed a work request to put up a, like a water shield down in the basement where we had streaming coming from, you know, coming out of the primary shield and he signed the work request to do it yet he said, you know, he denied ever knowing any problem about the neutron. I guess I went off on a tangent about going into an area without an instrument.

COLLINS: Let me ask which procedure is it that requires you to go in weekly to do this survey?

EGENRIEDER: It's not really a procedure, okay, what it is, we have a little computer printout, you know, a reminder sheet, I think they call it the tickler system or something like that, that comes out and every Saturday and Sunday, it's on there, do Unit 1 and Unit 2 reactor building survey.

COLLINS: Is that still being done?

EGENRIEDER: No. All of a sudden, well the guy who made the commitment to the NRC was Pete. You know Pete came in one day and Karl said I don't understand why you do surveys monthly, this is Unit 1 at the time, he said you have operators going in several times a week without an HP person, you know, so that's when Pete made the commitment, okay well we'll do it weekly.

COLLINS: Pete Valez?

EGENRIEDER: Pete Valez, right and then when he was confronted with it, he denied it, he said oh I told you to start, it should be done once a year, you know, so we were up against a brick wall because we couldn't really prove anything. Finally I guess they caught wind of the NRC, the NRC people caught wind of the shift supervisors and shift foremen always going insde the D ring, you know without remballs and without the propler instrumentation and stuff.

COLLINS: On the one entrance where you went in and received 700 mr, how long were you in.

EGENRIEDER: I would say roughly 25 to 40 minutes, I really have no idea. Okay. And most of the time was spent in the basement and the first floor, we spent very little time on the, you know, the top two floors. On the top of the D ring, you know, was real high, but the guy that was with me is a real heavy guy so I told him you just stand

over there by the steps where it's a low area, I says, and I'll just zip around the D ring getting the readings that they want and I'll come back, so you know, it was like a real fast walk around the D ring with my remball and my RO2, you know, going over to, you know, over the railings to get the readings and we picked up almost exactly the same, I think most of it came from the streaming down in the basement. We had, you know, it was a really weird phenonomon, you know, even at first we didn't believe the remball, you know, cause they are so shakey anyhow so if you move them too hard, you know, the needle flys and there would just be times you're walking through and nothing, all of a sudden, you know, it goes high, you know, it comes right back down to nothing, you know, we didn't really stick around, to really go hunting for anything in those high areas. But like, you know, when you get up to the right at the edge of the cavity, you know, you peg high and it pegged high as you got back near the incores and things like that, the gamma levels were low.

COLLINS: These instances where individuals did things that were contrary to your procedures, what documentation was made of this by the technicians involved. Do you make notes in your HP log, some kind of shift log, do you write nonconformance reports.

EGENRIEDER: Well we have no logs at all and we have found through past experience that it doesn't really pay to write up a violation because nothing is done and nothing is done at all to anybody who

violates. And if you write up an operations person you might as well hang it up because, you know, you work with them seven days a week, you know, and they can make life really miserable for you. So, you know, if we tried to stand up to it like a shift foreman or shift supervisor, they would shoot us down right to our foreman, you know what I mean, they would, our foreman won't give us any backing when it comes to standing up to another foreman. So we just, you know, we just had an instance the other day where Gary Miller, Mike Ross, Roe Bedow and two other guys went, they were inspecting Unit 1's areas for this tour that just came through today and they went in on the RWP to enter the Aux Building, I don't know if you are familiar with Unit 1's Aux Building, but right as you go in you need an RWP to go under the sample lines coming over from Unit 2, so they went on that RWP to go through there and then they told me that all they were going to do was just go into the Aux Building and look in the hallways, to make sure it was tidy, you know, in case people wanted to see if it was clear. So anyhow an operator comes down to me, an operator was up deconing the spent fuel pool at the time and he had an RWP and everything, he came down to me and said Ed, he said did those guys have an RWP for the spent fuel pool. I said no and he said well he says, you know, they opened the door, they stepped across the step-off pad right into the contaminated area with no boots, no nothing. They just wanted to look, so they came down and I said to them right away, I said to Mike Ross and Gary Miller both at the same time, I said, hey were you or were you not in the spent fuel pool. Yes we were. I says what RWP

were you on, well we didn't need one because all we did was open the door and looked. You know where the door is to get in there, there's no radiation area, there's no contamination area so I said oh and I dropped it and I went back to the operator and he said they definitely were, you know. They definitely were standing on top the decon storage pit cover which is a contaminated area. And, you know, we checked them out real good, they had no contamination on their shoes or anything, but anyhow I said something to the foreman at the time about it and I said what am I suppose to do, well its their word against yours. And it was dropped. So meanwhile now the operator, the operator got upset with the response that I gave him, so he got the HP violations and they are written up. Now I don't know what we are going to do with them, we'll going to give them to, Mulleavy, tomorrow but I am sure its going to go, you know, completely unnoticed, probably put it right in the round file, you know. They just, you know, they don't reprimand anybody for commiting an HP violation, so really what's the use of noting anything. We tell our foreman and that's, what else can we do.

YUHAS: If I am still alive. There are many questions here before I die. What is breathing zone air sampling mean to you?

EGENRIEDER: Well I would say that's the air around your, you know, your intake.

YUHAS: Do your people sample the workers breathing zone?

EGENRIEDER: No, very seldom. In fact if you would go through our, we have an air activity log book and, you know, we just we have a sheet for every area like in the Aux Building, the Reactor Building, and stuff. You can go through there and you'll see that some areas don't get surveyed, maybe once a year, not even that. Our new sampling room is a prime example, we just never sample anything in there, cause they go on the impression that if you have anything you're going to see it on a RMA-1, you're going to see it on a RMA-4 or RMA-6. Then you start worrying about it.

YUHAS: When you make your containment entries to check these leaks or do work in the containment do you sample the workers breathing zone?

EGENRIEDER: Okay, in the Reactor Building every morning when, okay, when the containment integrity is established we have a procedure, I think it is 1630 saying you will, if the containment isn't being purged, I don't know if it stresses that, but it says you can call up and get the readings off of RMA2 which is the Reactor Building air sampler and, you know, you can divide them by your sensitivities and come up with a ball park number. Now if this ball park number is greater than, you know, the MPC values that we have set then we have to identify the isotope. That is usually what we do so what happens we usually go down sample RMA2 for, you know, gas tritium, iodine and

particulate and then count them on the GeLi and then the tricarb and, you know, come up with the Reactor Building entry forms gives you the isotopic printout of what, you know, what isotopes you have in there.

COLLINS: Let me ask you a question. Where is the sample point for HPR227.

EGENRIEDER: HPR227, okay, now that's Unit 2's Reactor Building, that is right inside the Aux Building in the Unit 2.

COLLINS: Where is the actual sample point inside of containment?

EGENRIEDER: Oh, I couldn't tell you. I really couldn't.

COLLINS: Okay, how could you possibly let someone go into the containment to work then if you don't know where the sample point is?

EGENRIEDER: Well I guess we assumed it's the same way like Unit 1. Unit 1's is, I think there is a tap off on the operating floor and also on the 305 level, you know, so its, two tap offs that come into a common line and goes through the monitor and, you know we just sampled right off the monitor.

YUHAS: Awhile ago you said you were, frequently people go into Unit 2 containment to look for leaks.

EGENRIEDER: Okay well we sample off the sample panel in 227 but I don't know where, you know, where it takes a suction.

YUHAS: We're getting back to this readings on things. So if a man is going in there, he is looking for a leak and he finds it somewhere, a minor leak somewhere around there, is the concentration when he is standing there looking at this leak different, then the concentration on mixed samples somewhere else in the containment.

EGENRIEDER: Oh yea, it should be right but they don't worry about that.

YUHAS: Okay.

EGENRIEDER: At the time, okay, at the time there was not much activity at all and he had the isotopics right off the letdown and it showed very little activity at all.

YUHAS: Let's take Unit 1 sample. If a man goes down to work on a Unit 1 reactor coolant evaporator, he goes down to work on something, do you go down and collect a sample after he opens that evaporator up to work on it.

EGENRIEDER: Well once in a while we do. What they usually do is they purge it out, you know, they purge the feed tank out usually with

nitrogen, this is when they are doing a major overhaul on the evaporator itself, they purge it out with nitrogen and we just keep taking gas samples until the level gets down that you don't have to really wear respirators. When they are doing routine maintenance like changing diaphragms or changing pumps or something like that, if we don't have time to go down and get an air sample they put an RM-14 with lead shield around to get the background inside the, around the detector low and then what happens they say if they break the system and they get a rise in the RM14 they know the gas is coming up.

YUHAS: Let me give you an example of something that frequently everybody ... mech tech comes down, mechanical type, and he is going to go rebuild let's say, a condensate transfer pump okay, and he goes down ... this is a closed system, and gives the RWP, just described in normal procedure that your health physics department does as far as precautions and surveys and this kind of thing.

EGENRIEDER: A condensate transfer pump.

YUHAS: No, no concentrate

EGENRIEDER: Oh concentrate.

YUHAS: Radwaste concentrate.

EGENRIEDER: Well usually something like that, you know, where we have the liquid, you know, if they are breaking into a system we know can't be isolated or something, we always put them in Scott air pacs and wet suits and things like that.

YUHAS: This system can be turned off and isolated.

EGENRIEDER: Okay well what we usually do is say is it drained, and if they say yea, we say oh okay, you know, and then we do with the RM14 bit.

YUHAS: Do you not go down when they open the system up.

EGENRIEDER: No, not too often no. Once is a while. Like I say, you know, if you have the manpower to do it you do it, but, you know, most times we don't have the manpower.

YUHAS: What about radiation surveys?

EGENRIEDER: Radiation surveys, almost the entire Aux Building is done once a week. Okay, we have, what we do is this tickler system we have, you know, every night it prints out little schedule what surveys are to be done and then from there, you know, we do the surveys, you know, which is usually always just a beta gamma and a smear survey, we come back to the lab, we wrote up standing RWPs which were good for a

week for that cubicle. Okay that was strictly for just going in taking readings. So if someone wanted to come down and do work in the area we just get the survey out, the recent survey, and use it.

YUHAS: You mean the standard procedure states that if this pump is in this cubicle and you surveyed it once a week and the man came down from RWP to tear down that pump that you would not run the discreet survey around that pump?

EGENRIEDER: That is exactly what I am telling you, that is the way they operate it.

YUHAS: What about when they open the system, would you collect an air sample.

EGENRIEDER: Well okay like I said again, okay if we have the manpower we do it. Okay, usually when they are breaking into a primary system we do put them in respirators, okay, some type of respirator and we also call the control room, telling them the mark, you know, RMA, I think it is 6 which is the Aux Building, and RMA8 and if they see a rise, and this the way they do it, okay, this is the way the foreman that we have we are union people and this is the way they did it, and now that they are foreman that's way it is accepted.

YUHAS: Okay, but in reality, let's talk about reality. A man goes down to open the system, okay, he is going to open a highly contaminated system, radwaste concentrate, how bad would that have to be in order to show up on the Auxiliary Building monitor.

EGENRIEDER: Well I really couldn't tell you that because they never ran a test on that.

YUHAS: Okay, what I am getting at is there is a huge dilution.

EGENRIEDER: That's a fact, I think its a 100 cubic feet per minute delution I believe, as a matter of fact.

YUHAS: Even bigger numbers than that, okay, but now the man goes down, he opens the system up, to start off with would the general area survey indicate what the contact dose would be for him to unbolt that pump, the loop, and work on it?

EGENRIEDER: No not really. Do you know it depends who does the survey, okay, some technicians do, you know, a real good thorough surveys like they will go in, there might be, you know, a room this big, they might do ten smears in it and might do a lot of, you know, general areas and a lot of contact readings, okay, there's other people who might go in, make take one general area, one contact reading and one smear and get away with it, you know.

COLLINS: We've got to break here, I thinks the tape's about to run out. The time is 8:03 p.m. We'll take a break and change the tape.

SINCLAIR: The time is 8:04 p.m., we are continuing with the interview with Mr. Egenrieder.

YUHAS: Mr. Egenrieder, we'll still back in this cubicle with this pump now. What criteria is applied for determining when extremity monitoring is to be worn by individuals here at TMI.

EGENRIEDER: I believe not too long, I think it was during right before Unit 2, came, Unit 1 came down for refueling, when we were changing the seal injection filters, I guess it was right after we had tripped and we were changing the filters quite often, I, under normal conditions every time someones working with a hot item I always give them, you know, extremity values for at least one of their hands, if they work with both hands, I say well they will get the dose equal. But I remember, I guess it was Dave McCurdey or one of the maintenance guys were working on a seal injection filter, just changing it, and I assigned extremities to him. So then later that day they had to change another one and the guy came down and said to one of the technicians, well, you know, I need extremity badges and, you know, he said well why, you know, and the foreman said no you don't need them. Okay, so I heard about that, I called up Dick Dubiel and I said hey, I says, you know, they are working with these filters, I said what the hell,

and he said something about either we don't have to worry about it unless it is 4 times the dose of the general area or 6, I forget exactly the number, but that was his criteria, so I just kept issuing them anyhow.

YUHAS: Were these results of these extremity doses reported on the printouts, on the form 5's.

EGENRIEDER: Well I couldn't tell you because like, you know, I am not responsible for that, you know, we collect the badges, we write down on the logs, you know, we issued this extremity badge to this person for this hand or that hand or this ankle and where it goes from there I couldn't tell you. Cause like there is no one is really involved totally with the TLD system, you know, anyone who wants, anyone who works it works it and that's the way it is.

YUHAS: Okay now the man opens this pump up, okay, are you going to collect a breathing zone air sample.

EGENRIEDER: Well like I said once again, if the manpower is there we do it, if not we don't. We rely on the monitors.

YUHAS: - Is there any other type of survey that should be run when the pump is opened.

EGENRIEDER: Well, you know, you would do, could do a rough dose rate survey with an open and closed shield to see if, you know, you are getting any gas thing okay or just really see if you are getting a beta dose or even see if you are getting another gamma dose, usually in the high rad areas like that we always do make them take an instrument and make sure, you know, we tell them to put it on, okay, but we can't verify that they are using it or not.

YUHAS: When you said you make them, you mean the operators.

EGENRIEDER: They, you know, whoever it is, as long as they have an RWP on their badge they can go into any area and work, okay, except if its a real high rad area, you know, we usually send an HP guy, you know, it doesn't necessarily mean that if it is over 100 mr an HP will be present.

YUHAS: How often are people whole body counted.

EGENRIEDER: Once a year.

YUHAS: Once a year no matter what?

EGENRIEDER: No matter what, unless, okay, unless they get contamination, I forget exactly the levels, they are at my fingertips in the lab because I have them in my little mailbox. It gives you, you know,

your, the deep rem in your nose, how high it has to be before, you know, collect urine samples and how high it has to be to get a whole body count. Then they ship them down to RMC.

YUHAS: You are not painting a very attractive picture of good health physics practices in compliance with regulatory process. Has this posture you are describing changed since the incident?

EGENRIEDER: I would say no.

YUHAS: Could you give us some examples of what is going on.

EGENRIEDER: Well let me think. Now as far as Unit 1 up to now, Unit 1 with NSS formen there, you know, it is pretty much up to snuff, you know, everything seemed like it, you know, it was right at your fingertips. Unit 2, you could go over there and, you know, I know I remember one instance I was sitting up, I guess it was the second day or the third day of the accident, I forget exactly when it was, it was when I was going over there to do the Turbine Building sample, I mean the Turbine Building survey. I was sitting up there at the HP control point in the control room and two of the NRC people came in and they came over to our foreman and they said, hey this air activity for this RWP, where the hell did you get it. And both the foremen looked at each other like, hey help me out because I don't know. So finally it was Pete Valez and Bob McCameron, the foremen. Pete says why I copied it

off a previous RWP, you know. and he said well let me see it and they hunted and hunted and they couldn't find the RWP that he copied it off of. So, you know, it was funny, you know, cause finally, you know, you could see our foreman's true colors, you know, they are sitting there completely baffled, they finally got caught in their laxity, you know, and then finally I think it was John White, I think it is John, he said okay until you can document that number, I am going to cancel all work in this area. And, you know, they just really sweated it out and they went digging and digging and then they finally found the RWP that had a number on it, you know, where he copied it off if, but I don't know how, I think he said it was, you know, like a two day old number that he used or something like that.

YUHAS: Is that unusual to use more than day old survey data?

EGENRIEDER: No, that's the way, the way we operate in Unit 1, its, you know, its up to normal like for airborne activity on the RWP, like they said, if you don't see anything on RM8 or RM9 it is less than 3 times 10 to the minus 10th. And that's what we use, you could, you could really go through almost all our RWPs and you'll see that less than 3 to the minus 10, but you don't see any gamma scans or any, you know, air activities, you know, to support that number.

YUHAS: We understand that in the last couple of days that Met Ed HP Department is taking over Unit 1. Could you give us an idea of what's going to happen in Unit 1 as a result of this.

EGENRIEDER: Okay, well I found out on Thursday morning that the NSS people were going to take over Unit 2, rad services was going to be terminated and that all Met Ed health physics people were going to come back and do Unit 1 HP and Unit 1 and Unit 2 chemistry so on hearing this I went up to Tom Mullavey and I asked him, I said would it be possible to leave Dale Ferguson and Bob Hornbeck, which are the NSS foremen, to leave those two people assigned t Jnit 1 and, you know, to run our troops and leave our health physics foreman over in Unit 2. And, you know, Tom said definitely not, you know, he said we just can't do that. And I proceeded to tell him, you know, how it was the first time since I have been here since 1974 that I really felt comfortable working in Unit 1 HP, that when someone came to me with a question I had everything at my fingertips. I could answer almost any problem someone had, you know, we had up-to-date surveys constantly with air samples and, you know, it was really, we had .he respect of everybody in the plant. Okay, not only the technicians that were working in Unit 1 but also the foreman, you know, no one was afraid to take, you know, Fergerson or Hornbeck's advice and, you know, I explained that to Tom and he said well when we get back, when we get our troups over here we'll go back to normal, you know, and I just was dumbfounded at his response and I left it go. So then I kept stewing about this all Thursday night so Friday I called up Jim Seelinger, which is Unit 1 superintendent, I asked him if I could talk to him so about 4:00 in the afternoon he called me and told me, you know, that he could see me. So I went in and I, you know, I did the same thing with him, you

know, I told him the problem, you know, I said first of all are you aware of the fact that we are taking over Unit 1, you know. He said, well he heard it, he wasn't sure if it was going to happen or not. And I, you know, I proceeded to tell him the same thing I told Tom and, you know, he sorta, you know, make it look like it was the health physics seniors that were responsible for the laxity in the job, you know, he kept defending his foreman to the till, you know, saying, you know, it was because of us that, you know, the health physics program can't work cause we don't have any drive and we don't have any initiative and don't show any type of leadership. And I just threw on to him, I says hey how can we show leadership you know, when our foreman can't show any, you know, I said we make a decision and if the operators don't like it they go to our foreman and the foremen give in to them. I said how can we operate like that and he didn't really give me any answer. He just, you know, a sing song, so you know I left, when I left he said well I guess I didn't give you the answer you wanted to hear. I said no but you gave me the answer I expected and just walked the hell out of his office. He wasn't too happy with our little session. But, you know, I said something to Dale Ferguson about it and he said I can't believe that, you know, they would they would allow people to come in, you know, like they had no idea what was going on, Dale and Bob had no idea what was going in Unit 2 and they just threw them over there. Saturday morning came and there they went, you know, they just swapped positions, you know, like it was really unfair to the foreman, you know, to do something like

that, and as it turns out it just so happened that on, I brought this up to Jim Seelinger on Friday, I said well tomorrow morning they're drawing a Unit 2 primary sample in the primary lab and I said our foremen have no idea what to do there and I heard it was a big fiasco, you know, when they drew it, you know, they came down hard on Bob McCann because he had no control at all of the area when they were drawing the sample. It just goes to show they don't, I don't feel that they care about the health physics program at all, they are just a bunch of yes people and, you know, that's all that's to it. We had an instance right after that neutron dealing we had, we had a big conference where Joe Logan came over and talked to us, you know, sort of like criticized us for not bringing up to their attention, you know, the neutron problem and he says, you know, you have to, he says you want to make things work you got to communicate with your foreman, you got to tell your foreman, so we got on to a thing about, you know, we kept saying, well, you know, when they come down and tell us they want to go in Unit 2's Reactor Building we always said no, we won't let you go in. But it takes the shift supervisor, the health physics supervisor, and the Unit superintendent to get permission to go inside the D ring at power. So, you know, those three would always give it no matter what, so he came up with the idea okay from now on the only person that can authorize entrance is me. And I said well that's sounds good, Joe, I said but, you know, but when we're on back shift and you're home the shift supervisor comes down and says, well I called Joe Logan and he said we can go in. I said do I call him a

liar or do I say okay well you're telling the truth, go ahead. I says well if you are going to authorize entrance why can't you call us and tell us. He said no, I live sixty miles away I can't be bothered. That was his response to that. So we kept on about this communication bit and I said, well I said you know, I think, you know, you're really off the beaten track here cause we do our surveys on a daily basis and I says we put them in a box and the foreman initials them every day. He initials the surveys. I says for the last four years now you have had a million PPM almost in every cubicle of the Unit 1 Aux Building. I says now the foreman signs these surveys so either he's not looking at what he's signing or he's couldn't care less. So the next day the foreman stopped, you know, initialing the RWPs. And they blame that on lack of communication. During the refueling outage when I was in control, since I am the senior on shift, I was always in control of the lab. So I would, you know, ask our foreman, I said hey our 281 Aux Building is ridiculous. I said the main hallwals you can't even go through them anymore without getting contaminated. So I said, you know, get me some utility workers so we support them. No I can't do it, they just can't give me any. So I would get on the phone and I would call the shift supervisor and I would say hey we need some utility workers so he would call up and in 6 to 10 minutes I would have more utility workers than I needed. He wouldn't care if they are working double or triple shifts, if they wanted to stay to decon, he let them, whereas our foreman, you know, they would just not do it. So finally we did, we started to get it squared away and what happens

on turnover you pass it onto the foreman that, okay there's a foreman on shift with us by the way during refueling outage, okay, but the senior has to take charge, you know, he has to be the one to direct this kind of stuff. So when we decon something I always like to have an HP man right there so if they decon an area he's there swiping right behind them so he can keep the step-off pad progressing. So, you know, as long as, you know, I am there to make sure it is being done, it gets done but then as soon as shift gets changed the foreman forgets about it, the guys are down them scrubbing, no one's down there backing them up. You come back the next day and the whole area is crapped up, you know, we spent three days like that deconing the same area because the foreman wouldn't make sure it was followed up, you know, after the shift change. I don't feel they make any type of, what do I want to say, they don't try at all to correct, to alleviate the situations down there. We've had pumps and valves, the packings been leaking since before we went critical. They are still leaking. All our primary sample points go to the floor in Unit 1, okay, they keep saying well the engineers in Reading have to, you know, approve it, you know, the design changes to put the sample throughs in and what they have is little tiny sample troughs that you can't even get the bottle in, you know, because for one thing the sample line goes down into the trough, you know, so how can you really draw a sample. So, you know, we bitched and bitched before Unit 1 even went critical, we said hey this is going to be a problem, you know, we got Unit 1's BWST draining to the floor, the both evaporators, the feed tanks drain

to the floor, you know, and they kept saying oh no, it is a design change and has to go through the channels, okay, now this has been what five years. Where in Unit 2 we noticed the same problems and like within two weeks they were done. Now tell me what the difference is, you know, I really don't know.

YUHAS: Let me ask you a question that may hit home a little bit but based on the attitude that you're putting across as far as the formality of operations, do you believe that there may be any instances where dosimeter results had been screwed with and not honestly entered into the Form-5 system.

EGENRIEDER: Well yea, we have caught some shift supervisors using the wrong badges, you know, if they're high. We had this, I think we caught most of them but in this last refueling program when the operators were getting a lot of exposure, you know, we caught people going in trying to get in without them. We really don't have, we don't have someone sitting there making sure every person who goes into the Reactor Building has his TLD on, you know. because there's one person to the control point and there is 50 to 100 people going through there an hour, you know, and you are trying to make sure they are undressing properly and, you know, logging their exposures in and out and making sure they log their times in and out of the building so you really don't have time to make sure everybody has it, you know. There were several instances where some of the shift supervisors and the foremen would pick up somebody else's badge.

YUHAS: Can you give us specifically some instances, names.

EGENRIEDER: Well Bernie Smith is the biggest offender.

YUHAS: You mean, let me just comment on that. You mean you had this problem with Mr. Smith more than once.

EGENRIEDER: Yea.

YUHAS: Can you describe it.

EGENRIEDER: Well, you know, what can I say like you just see, you know, you'll see him in an area, he won't have his TLD on, he'll say its back in my rack, you know, big deal. Or you would see somebody with the wrong one, see him with the wrong one, oh I guess I grabbed the wrong one by mistake, you know, the way the racks are, you know, it would be easy if you are not, you know, an honest person could easily make a mistake, okay, just by reaching in the wrong cubicle, you know, because the way the, I think we alleviated the problem, but the racks used to be the numbers were the numbers were above, above the dosimetry and the way the racks looked, it looked like the numbers should have been below so, you know, people were picking the one above by mistake.

YUHAS: So in these times that you have crossed with Mr. Smith, is that an excuse that he gave you or that what he told you, that he picked up the wrong one.

EGENRIEDER: Yea, yea.

YUHAS: Did you document that.

EGENRIEDER: No, like I said earlier it doesn't prove to document anything. Okay.

YUHAS: Are you afraid to document something like to that with respect to Mr. Smith.

EGENRIEDER: Yea, really I am because you know, well we had an instance where he came into the lab one day and it was during some type of outage and I was the senior in charge. He came up to me and said why in the hell are all these guys sitting around here. And I said hey Bernie, why you don't you go up into the control room area and you see how many operators are sitting around. I said we're sitting back here waiting for something to happen, providing escort service and stuff like that. I said I will worry about my people, you worry about yours. And he said, don't you ever forget one thing, I am in charge here, you answer to me, you know, and he threatens people and I guess he has a lot of weight around here cause anyone that dumb really, I

wouldn't see why he would be in that position, you know, only when a shift supervisor has to call up a technician, you know, I mean not so much as for HP but for chemistry and ask him a basic question. Even some of the tech specs you know. what's the spec on this, you know. I can't see where he's really a qualified person, you know, that's a personal opinion but I can't see where he would be a qualified person to run a plant especially be in charge of the department that he's asking the question of.

YUHAS: Are there other individuals now who you had problems with either not wearing dosimetry or wearing other peoples dosimetry or situations where you suspect they are attempting to deceive?

EGENRIEDER: Well we had some instances where, okay, what we would rely on most of the time is the dosimeter reading, okay and if the dosimeter goes off scale or if they are getting close to the, you know, quarterly limit then we read your TLD to get an up dated result. But we had several instances with Tex Acker for one, he would not give us the true dosimeter reading to make it look like it was always low.

YUHAS: What was his name.

EGENRIEDER: Tex Acker

YUHAS: Acker.

EGENRIEDER: Yea. Okay and that's about, I would say they are two biggest, oh Ken Bryan sort of, I had trouble with him earlier but then I showed him I wasn't going to take any shit from him. And he sort of straightened out.

YUHAS: How the intimidation of the operations group of say any tech right now appears to be able to go over and read a meter or readout a TLD, okay, during this first three days we have indications that people who are taking large doses were going over there reading their own badges.

EGENRIEDER: Personally I can't believe that because I don't think the people really know how to operate the machine.

YUHAS: I am talking about HP techs.

EGENRIEDER: Oh health physics, oh yea sure that's normal.

YUHAS: Okay is there any reason to believe that an individual might have exceeded a regulatory limit that operations management would have told them not to enter his dose?

EGENRIEDER: No I don't really think so. Personally I don't believe that cause for one guy, the guys who could be easily persuaded to do that they would brag about how much dose they get. They think it is a contest, you know, like they are winning a race and it seems like the person with, the person whose the better technician works more overtime and gets the most exposure. That's the way some of these people feel in our department including our foreman and I really don't think anybody would lie on that. Of course when we had that incident with the neutron exposure, some of the technicians accused me of doing that, you know, entering, just going down and typing it on the teletype which would be easy to do, you could just go down and type in the numbers and with, you know, with your TLD number make it look accurate and how could they disprove it.

YUHAS: Is there any reason that you might suspect that an individual either precipitated or may have aggrevated the incident on March 28th.

COLLINS: Willfully.

EGENRIEDER: I would say no. I really don't think anybody, you know, would do something like that. I realize there is a bunch, there is a lot of friction between, you know, like union and company and even company and upper management, you know, there is a lot of friction but I don't think anyone would do, you know, I think people would be more aware of the consequences what could happen not only to the plant but

to themselves and to the public, you know, something really drastic happen. But I can't, you know, I can't believe someone would sabotage, you know, I think the main fault, I think Met Ed crippled their own plant because they rushed it, they definitely rushed Unit 2 and the lack of training in Unit 2, you know, was terrible, most of the operators in Unit 2 are, you know, right off the ships. And you know, where as Unit 1 they had years and years and years of training, you know, and you just didn't have that in Unit 2. Even really from the health physics standpoint I could go over there now and someone ask me about an area and I would say I have no idea what you are talking about. Cause there is a lot of areas I have never been in.

COLLINS: With regard to operator training, what you are using to base your conclusion that they lack training.

EGENRIEDER: Okay well when you call, when you call up a control room operator and ask him a question about the plant, he says I don't know I couldn't tell you, you know, or you overhear the operators talking among themselves, we don't know how this operates, we don't know how that operates, okay, the fact that they had to have, you know, in the whole startup program they had to have a babysitter down there with the operators on the polisher to keep it from tripping to make sure they regenerate them properly and stuff like that. I think that's a basic, you know.

COLLINS: Your talking Aux operators rather than

EGENRIEDER: Oh right I am talking, well we had some experiences where you call CRO up, you know, Control Room Operator, and ask him a question and he said well I don't know, you know, like atmospheric monitors, things like that, you know, like we have no training at all when the HPR units over in Unit 2, and like we would call them and ask them questions and they said I couldn't tell you.

COLLINS: Would, have you ever had any indication from operational point of view that the operators had problems with their training in Unit 2.

EGENRIEDER: Well I had, before the accident I had one of the CRO's come down, Hal Hartman, I think he left now, I am not sure but I haven't seen him, but he came down one time we were talking something was irritating me so I had a fight with Fred Huwe or something, you know, I was really pissed off and he came down and we were just shooting the bull and he was telling me about his experiences in the control room, how uncomfortable he felt, you know, from his standpoint cause he didn't think he was trained properly enough, you know, he think a lot of things were lax. I think this was right after that neutron incident when he said, well I think there's a water shield up there but I am not sure, you know, and I think it's supposed to be checked but I don't think we have procedures, you know what I mean, things

like that. Just from general conversations with him you can tell that they don't really know exactly whats going on. The Unit 1 operators are assigned to Unit 2, like I think on every rotation one operator or two operators is put over in Unit 2, you know, for the whole rotation and then go back to Unit 1 and just from their point of view, well I don't want to go over there, you know, I don't like it over there, you know, that general attitude they weren't comfortable in that unit.

COLLINS: Have you had any direct input, I know some of the HP technicians have had some operational training, they were operators in study or whatever, have you had any of that type of training.

EGENRIEDER: No. The only thing was just what you learned, you know, just from going through flow prints and stuff like that. No we had the basic, you know, this is a condenser, this is what this does, you know, I knew that from Crawford, you know, they just added the primary side on...

COLLINS: I have a couple of other questions not specifically related to this topic. This is Collins again. With regard to your training, your original training and other training you had since then, for example, going from junior tech to senior tech, what kind of evaluations were made to determine the level of your training, you say that you have taken general employee tests once a year what other tests or methods of evaluation of your training have been made by the licensee.

EGENRIEDER: That's it.

COLLINS: Were there no tests for you to either demonstrate to a foreman or supervisor or any written or oral tests when you went from a junior to a senior tech.

EGENRIEDER: I am trying to think when I came off my probation, my first 90 days down here I had the, I think I had the 60 and the 90 day evaluation, you know the oral evaluation where they ask us a couple of questions, you know, at that time they ask us, it was right after we were done with the Dick Bower tapes, you know they had asked us about the five region curve and things like that. Things that now I have forgotten. You know I basic idea what they are but I couldn't really, you know, explain it and, you know, that was with flying colors, you know, everybody seemed to pass them. Then when we became, when we went from junior to seniors the only training at all that we got when we went from junior to senior was training on the MCA. Ken Fredericks went through us and showed us how to do an energy cal and how, you know, how to tweak it in to make it right, you know, explain a couple principles, you know, not much theory but just a couple principles of how the MCA works. What to do with the MCA.

COLLINS: Were you then given, asked to demonstrate your ability to operate the MCA.

EGENRIEDER: Well all we did then, you know, like he took, there was four of us at the time, you know, who came off probation at the same time for senior and he just took all four of us in there and he would mess up the high voltage, not the high votage set, but the gain setting and the input offset volts, he would just take them out of cal and make us calibrate it, you know, using those two knobs. Inasfar as operating it it is real easy, you just erase it and press a start you know, no problem, but that, then I guess after we got it calibrated we ran a gamma scan on a concentrated waste storage tank I think and he wanted to make sure that we could bring, you know, do the weighted mean activities and bring them down and, you know, be able to determine what isotopes were there and which ones really weren't, you know, using the abundance tables and things like that.

COLLINS: Going back to something you mentioned earlier, you made a comment that it was your opinion or impression, I don't know exactly how you phrased it, that coming out of the outage there probably was a shortage of instruments. Were you involved in any inventory, weekly inventory of instruments or anything that would give you a quantified conclusion as to the shortage of instruments?

EGENRIEDER: About the only way you could get, the only inventory we took was when we opened the cubboard trying to find an instrument like we have a cupboard for E520s, an cupboard for teletectors and so forth, you know, you go to one cupboard there is none, then you go to

another cupboard there's none in, you go to an air sampler cubboard there isn't any. You see everything sitting on the To Be Repaired sheif, or, you know, you can go upstairs into the instrument shop and see them in their storage bins all torn apart. This is, for years we've had this problem. And like we would call our supervisor and we say hey we need it. Oh okay, I'll try to get to them. And that's it.

YUHAS: I today went through the calibration sheets, you know the sheets you fill out as the date calibrated, date due.

EGENRIEDER: - Right.

YUHAS: I went through all those and I find some numbers roughly, of the 16 teletectors, on the day of the incident, 4 were operable. Of 16 or 15 E520s six were operable. Of about 14 or 15 PIC6As 4 were operable, no PN4s were operable, by operable I mean either in service and in calibration, that's my definition of operable. Does that see typical of what you...

EGENRIEDER: No I would say it is probably a lot less than that because that book really isn't up to, you know, our documentation is really bad, you know, it really is, cause there is so many people like, you know, we have been stressing the point, we say we should have one person responsible for just that, make sure the instruments are in calibration, you know, make sure the, we used to have a portable

instrument sign-out book, okay, so every instrument that went out of the lab, you know accompanied somebody into an area, we knew who had it and where it went. That fell by the wayside two days after it started because just too many people dealing, too many people who don't care , you know, they are just there to get paid. And that's it. They can't get involved in their jobs, and once in a while, you know, one of the foreman will come back and say I want an inventory, you know, it takes you three days to locate instruments. I know during the whole refueling outage we were short, in fact, I think it was yours, you asked about going into areas without instruments, well I am pretty positive that in our procedure for Reactor Building entry it says anytime you go into the Reactor Building you will carry a dose rate instrument. That was waived during refueling outage cause the instruments were short but really you only ever had the problem in Unit 1, Unit 2 you never had that problem, if the RM14s came due, you know Fred always called the I and C shop and they were calibrated that day. You know when it needed to be repaired and was calibrated right away. It is strictly the foreman.

COLLINS: With regard to the Reactor Building entry and waiving of carrying survey instruments, how did this waiver, how was this waiver communicated and who communicated it?

EGENRIEDER: Pete Valez told me verbally, you know I say hey we can't send these people in, there's no instruments... Hey, they don't really

need one if there is none. Like the first floor you know you have areas of property of less than 5 or more, if you get around the core flood tanks you know right around the penetrations, you get some high contact readings. We kept saying, well Pete the procedure is they will have... yeah, but they don't need one.

COLLINS: So this was not in the form of a general waiver but a specific waiver for specific RWPs.

EGENRIEDER: Well no just general, you know, if it wasn't you know if it wasn't a high rad area in the Reactor Building you didn't have to wear it then, you didn't have to use one.

COLLINS: About high rad you mean greater than

EGENRIEDER: Greater than 100.

YUHAS: I would like to terminate the interview at this time because we are about out of tape and I think we have covered about all areas and I think that, feel free to come back and talk to us and we'll probably be talking to you again. Maybe not on tape though. Is that agreeable?

EGENRIEDER: Definitely, I mean want to see, like I told Seelinger on Friday I said I went through my chain, I went to the top, I said your

bringing your Unit 1 foreman back, okay the first time I catch someone doing something out of procedure I am going right to the NRC.