

Date: June 4, 1979

Occupation: Geologist, college professor

INTERVIEWER: Can you remember when you first heard about the Three Mile Island incident?

NARRATOR: Yes.

INT: Can you tell me from whom and under what circumstances?

NAR: Well, from one of our geology majors, it was – the day the thing happened was a Wednesday, is that right? I'm gonna refer to days of the week, is that...?

INT: That's fine. We know – we can correlate them with...

NAR: It's going "tick-tick", is that a problem? *[Pause.]*

INT: It'll be all right.

NAR: Um... It was Wednesday morning sometime, mid-morning as best I can remember, when one of our majors, who lives in the Harrisburg area came in and said, "Hey did you hear there were problems at Three Mile Island?" ... and I really don't remember much more about it than that.

INT: At the time, were you concerned about it?

NAR: No.

INT: Did you know there was a reactor there before?

NAR: Oh sure.

INT: Did you know how far TMI is from us? *[Phone rings – interruption.]*

INT: Okay, I was asking you how far it is from here to Three Mile Island.

NAR: 23 Miles.

INT: You said you didn't initially pay much attention to it, or in effect, it didn't strike you as a problem initially. Did your mind change about that?

NAR: Well, as time went on, but it changed... I think the first time that it really sort of became higher in my consciousness was Friday morning.

INT: So until Friday morning, you didn't seek out any further information?

NAR: No, maybe listen to the radio, but it was more the times I usually listen to the radio for news, in the evening, or the news on TV in supertime, that sort of thing. I guess I was a little surprised at how much the local news folks were making of it and that the WHP people were patting one another on the back for having got the first scoop and that sort of thing, on the news that night, and hearing Ron Drake say something the next morning about, so-and-so broke the story and it went out on the national wire, or something of the sort.

INT: This was Wednesday?

NAR: Well, Wednesday, and I guess Thursday morning he referred to Wednesday's scoop that came out during his show in the morning. I guess it was raised in my consciousness a little bit in the meantime, because somewhere, I guess it was Thursday, we had a candidate here for Candie's Environmental Science replacement position for her leave, and Candie was concerned about it. And so that sort of came up in conversation when we went out for supper Thursday night with the candidate, that was one of the things in the conversation. And then it really came into sharp focus Friday morning when I guess I heard more on the radio, but the first thing that really hit me was that Marie Baker called and said that Candie had left town, and that she wouldn't be at the meeting with the Dean at eleven o'clock, or – I think it was eleven o'clock - and would I be sure to meet her at noon and take her to meet some students who were going to take her out to lunch.

INT: Oh, your candidate.

NAR: And so I was, well I thought there ought to be somebody there to go with the candidate to the meeting with the Dean, so I jostled things around and went to that, but that caused some commotion and, I don't know whether you'll ask later on, but my first reaction was annoyance that somebody would run off.

INT: That was the next question I was going to ask: How do you feel about others' reactions to the incident?

NAR: Well, that changed over time. My early reaction was annoyance that all these people were so stirred up about things, and that particularly that they left and left people hanging, in the lurch. I guess it wasn't until after the weekend that I started to sort things out. I was still annoyed that... people didn't let me know where they'd gone, at least, which I put on a different level than that they did go, but as things went along, I finally realized that people with young children, especially, or that were concerned for their own safety should have the right to do their thing, and I did my thing, but I didn't feel that threatened.

INT: Did you ever feel it was a crisis? I guess we're asking for a degree of...

NAR: A personal one?

INT: Yes, did you ever feel *yourself* that it was a very serious situation?

NAR: Oh yeah.

INT: But you didn't feel...

NAR: But I didn't feel threatened myself and I suspect that has to do with my scientific background and perhaps a little better understanding of – that invisible thing called radiation.

INT: Can you enlarge on that a little bit? I mean, what in effect made you feel... oh, perhaps you might say more confident, or reassured, or, what made you feel confident in terms of... I gather you didn't leave the area.

NAR: No, I didn't leave, the closest I got to thinking about it was, I made sure my gas tank was filled up Saturday morning.

INT: You didn't pack?

NAR: I didn't pack.

INT: Did you make any plans?

NAR: No, I really didn't.

INT: Okay.

NAR: I guess somewhere along the way, it entered my mind well, where would I go, and I decided I'd go west, because that was away from the plant, and down a likely upwind, under most weather conditions. I did – You asked how far away the plant was. On Friday morning, somewhere mid-morning after I'd heard about things getting more hectic, I ran into Ken Laws, well, I heard on the radio the business of children and pregnant women being moved out, and that was mid-morning sometime on Friday, and there was some suggestion that people close their windows, and it was addressed more I think to the immediate area, and I found myself getting up and closing the window outside the office door here, which is almost invariably open. But then the doors to the building were open, and I found myself going out and it really didn't concern me that much, it's almost like a superstition. *[LM laughs.]* And then I didn't pay any more attention to it after that. Then, sometime Friday morning also, you see, Bill Alwood *[?]*, the fire chief for Carlisle, works here in the department as our technician. And so he's tuned in to the Cumberland County Fire Emergency Network on the radio; he's got a radio right down the hall, and he said, "I don't know what the devil's going on, I keep hearing all these things over the radio, but they don't say much, and they're kind of quiet words, but they're sending people over to that side to help move some..." I guess to move old folks or something like that. And then he said, "Well, I'll try and find out

what's going on." And so he called down there and said, "Can you tell me what this bulletin is all about" down to the control downtown, and they said, well they really didn't know what was going on down there either in detail. The word was that sirens were blowing somewhere out in Harrisburg or somebody pushed a button when they shouldn't have, I guess. Anyway, that caused some added concern, and made us realize that there was more to it than just a little bit. And somewhere along the way, Bill went down the hall to our map drawers, and we've got a big composite map of the Cumberland Valley out here, the topographic maps. And it cut short, one map short of Three Mile Island. He went down the hall and got out the quad that has Three Mile Island on it, and tacked it up next to all the others, and it's still out there now, but at any rate then we got out a ruler and measured out the distance, so we knew how far we were away, and I remember we were measuring out five- and ten-mile and twenty-mile radii to see where we came on that.

INT: You said, now this is all Friday morning that we're talking about, and this is the point at which you saw a real change in your attitude towards what was going on. Did you, after that point, did you follow media sources more than usual?

NAR: Yeah, quite a bit. In fact, starting Saturday if I wasn't where I could easily go to a radio, I had a little battery radio, a little cigarette-package-sized radio, and I got that from home and either carried it in my pocket or left it where I could get at it.

INT: So you wanted to stay in touch pretty much.

NAR: So that if I wanted to, I could tune it in and see what was going on.

INT: How did you feel about media handling of the situation?

NAR: Well... I guess I'd have to make several distinctions between different kind of media. I thought the local media did reasonably well, compared to the national, both in terms of radio and in terms of – well, radio, TV, well I don't hear national radio that much. But local radio and TV as contrasted to the national network evening news...

INT: What sort of contrast are you raising there?

NAR: Well, I thought that the local media were more responsible; I think maybe it had to do with their sense of having to tread some middle ground at not panicking everybody, but keeping people informed. And probably in the early stages, the local media were better off in terms of where to go to get information, too. And I contrast that particularly to Friday night, when I heard Walter Cronkite. He devoted half the news to this thing, and that sort of blew my mind. And I don't remember his exact words — it might be worth your going back and seeing what they were sometime, but the thing that I find an analogue to, when I think back on it as, is "Today will live as a day of infamy" and I thought of FDR's Pearl Harbor speech. That was the image that came to my mind.

INT: As you were watching Cronkite that night, you...

NAR: Yeah. And I'm not old enough to remember Pearl Harbor. But I've heard it on the radio many times, or at least the first words of it, and that's the kind of thing that came to my mind. And then to have half of a national news program devoted to something in my backyard, I guess... They never devoted that much time to, to the Agnes flood, for example, on the national level news, even though that was in my backyard and there was plenty of local news on it.

INT: So you felt the national media, in contrast with the local media, were over-reacting in some ways?

NAR: Yes. I think I saw the same contrast in the newspapers. By putting Harrisburg and Carlisle papers, which are obviously different styles and abilities and all the rest, in what they contain in them, but I found them probably more balanced in their descriptions, and not quite so glaring headlines as compared to... *New York Times* or *Washington Post* or a Philly paper; something like that. Well I don't know as I saw the Times—I picked up extra papers, I know that. You asked whether I paid more attention to the media, I did.

INT: You got more papers, you listened to more radio, you watched more television. All three.

NAR: Well, I didn't see that much television, because Friday night... we might as well get it on the record now, but Friday night when I went to the first of the College's information sessions, that was Friday night, wasn't it? I found myself offering to Charlie Seller to help. I said, if there's anything I can do and I could see that students, from the tone of voice of students that they were very upset, much more so than I had expected. And on numerous occasions, I hadn't seen them as upset as... as I had since the several days of the Kent State affair...

INT: Did that occur to you at that point?

NAR: Yeah, that evening.

INT: No, but you thought about that connection?

NAR: Yeah. And I found myself talking to several others who were at Dickinson at that time, because, not Kent State itself, the Dickinson College student reaction to Kent State, and that had to do with not only Kent State and the national mood at the time among students, but it also had to do with the Kent State affair – shooting occurring on the afternoon of the same Monday that we were to vote here in faculty meeting on whether to continue ROTC at Dickinson or not. And so the mood, the question was already high in people's minds and then Kent State just sort of blew it, and I can remember sitting in the faculty meeting over there and having chanting students on the steps outside, mobs of them, which wasn't very conducive to intelligent discussions of an important issue.

INT: So you felt the tension at the meeting that night with students [*unintelligible*] was very high.

NAR: Yeah, well the tone of voice was for some of them, I think there was a wide range, but for some of them I could just hear it in their voices. Anyway, at that meeting I just listened and offered to Charlie Seller and said, if there's anything I can do to help, let me know. And I guess part of my – I just wanted to do something, but also as time went on, I realized that I didn't have a whole mess of other people, family to worry about... if it isn't on the record, I'm single, so there's no other family that lives in town, and so I thought, well, I can take care of myself, and I don't have a mess of other people to worry about, so I felt easier about doing these things than people that had others to be concerned with. Well, at any rate, he put me down for, I don't know, sometime Sunday, to help answer telephones, and said they were answering phone calls from parents and so on in the Student Services Offices. And then, so I went to bed. And the next morning at home, I wandered in after I got my papers after breakfast to Student Services, and the next thing I knew I was there helping answer telephones and spent most of the day, into mid-evening, both Saturday and Sunday, talking to people on the phone.

INT: Do you want to make some observations about that?

NAR: Well, I don't know. I guess it surprised me again that people were – it took a long time for me to realize that people were so upset.

INT: The people who were calling were upset?

NAR: Yeah, the people who were calling.

INT: Who were they largely?

NAR: Well, I'd say the ones we talked to were two-thirds parents, one-third students, give or take a little. And if you haven't done it, there are a series of logs that I think Mary Frances has.

INT: We intend to look those over.

NAR: I gave them all to her when I tallied them up. But of the ones that we logged, there were, from Friday afternoon through Monday morning, there were two hundred fifty, three hundred phone calls, something like that. And many of the short ones were being headed off at the switchboard, just basic information – is there anything new, or something like that.

INT: So you were only talking with people who wanted *more* information?

NAR: Yeah. And as I understand it, whoever called, even if they wanted to talk to the president, was plugged through to us. And I gather at least some parents wanted to get right through to Sam. But we were told they'd been told at the switchboard to put

everything through to us and use judgment if there was some... I remember there was some call from County Control, and they plugged that one through to his house. But usually we were told that if it was important to keep Sam and others free to worry about the major decisions and things like that.

INT: Did you see any patterns in the calls?

NAR: Well, yeah, at times. Some of the... The thing that impressed me the most, and it took a while to sink in, was that it was geared, the calls were, many of them, geared to various things that would occur in the media. For example, I guess it was Saturday night, there was this infamous announcement that went out over Lancaster T.V. station, or, I don't know whether it was Lancaster or network news. But at any rate, it was ten o'clock at night, something like that, give or take an hour, and they announced that the area was being evacuated. And then it was squelched within fifteen minutes or so by the governor's office, another announcement came over the radio – we were playing a radio in there. And within a few minutes of the time that came over, the number of calls picked up, and then there were calls during the night. Other people were on, and Sunday morning I went in again about seven. Ron Doernbach was in there, and I went and got some donuts for us, and then picked up several papers downtown, Sunday papers, and there were various wild headlines in the Baltimore, Washington, Philadelphia papers. I think we had the *Washington Post* and one of the Philadelphia papers. And about eight or eight-thirty the number of calls started to pick up like mad, and you could just see everybody, and we all remarked at it at the time, you could just see everybody getting their Sunday paper, going back home and reading the headlines, and then calling up and saying “what the devil's going on?”, and, “what are you doing about this?” Well by this time... well I must say, Sunday was the toughest day in terms of phone calls. By that time, I guess it was Saturday, or was it Friday, I can't remember, the College had made a statement by then, that was a written statement that said, “we intend to continue having classes but that people should follow their consciousness and own wishes and parent's wishes; if they want to go, they're welcome to go, but classes will meet.” Well then *that* started a series of calls both from students within the College and then eventually parents, who were saying, “Well, you're putting these kids between a rock and a hard place, because you're saying ‘you can go home if you want’, but then they're afraid they're going to be penalized if their classes are held, or if they have an exam or if they miss something”. And so I then found myself saying to people, “Well I am a faculty member here” – to parents especially, “I know that if I had an examination and a whole bunch of people are missing, and they've gone because they're afraid, I would do my very best to help them make up the exam at some time.” Then, I'd say well, clearly they're going to have to make up the work, but I'll help them. And I'd do that in other circumstances. There wasn't anything that bothered me particularly. And then all of a sudden somewhere along the way, somebody, student or parent, student I guess, reminded me that Jeff Niemitz, my colleague, had an exam on Monday morning, so it hit me closer: it was the whole introductory Geology class. The 110 that I knew from the previous semester. *[LM laughs.]* So I'd find some of them, saying... I guess they felt reassured by what I said. Well at any rate, by Sunday that pressure was much more intense, questions like that. And I remember – well, by Sunday there were at least three of us

answering phones, and t times four or five people in there on different phones in Student Services, and at times midday and early afternoon, there were three of us talking, four of us talking at once, and the minute you'd hang up another one would come on. And I'd find myself after about an hour of this, I'd – you just hang up and another one would come on – and I'd find in between I'd leave the hanger down and let it ring several times while I got my head together again, and say several “damn it”s and other things like that [*LM laughing*], and then turn on my sweet voice again, and say, “Good afternoon, Noel Potter speaking,” or something like that.

INT: Did that let up? When did that let up? You were just on for the day, is that it?

NAR: Well, I was on into the evening. It really didn't let up until the new announcement came out late Sunday afternoon saying that classes had been suspended for the week, but we were remaining open. And various funny things happened with that. Well, I can remember much of Sunday midday to early afternoon, at various points, Charlie Seller and other people from the administration would come over. Len Doran, and so on, and I found myself getting more and more agitated about the number of calls, and we had the record of how many we had, and we'd say the kinds of things we were getting from people, let them know. And I remembered saying that, “Well, you've got to say something more than you've said now; I'm not telling you whether to suspend classes or what”, I don't know whether that even came up – “but we've got to be able to tell parents more than we're telling them now, cause we're just leaving everybody hanging.” And meantime, we'd stirred some the Student Services people to get the RAs in the dorms, what they could find of them, to find out how many people were still there. And they really hadn't done that until Sunday. I said Saturday, “you ought to be out there getting a count.” Well, then they started another measure that's a pretty good one, except weekends are tougher – is how many people eat in the dining hall, so they were using that as another measure of how many were still around. But at any rate, by then they knew that enough students had left that – they weren't talking about 15%, you're talking about half or so. Anyway, I and the others in there answering phones would say to Charlie and the others every time they'd go by, “Hey, we need help with more information to tell these parents”, because it was...and then we were told, we'd have something later in the afternoon and call back by supertime. And so once the word was out that classes were suspended, then students called to confirm it. And apparently they got the word out damn fast, they got it into the dorms, they put up copies of the sheet...and the sheet was very careful to say that the College would remain open. But I remember at one point within half an hour after the sheet was out, a parent called and said, “My daughter called me and said you're closed next week”. And I said, “Well, we're not closed next week, classes are suspended. The College will remain open, some of us will be here”. And he said, “Well, I'm wondering whether to come get my daughter” — calling from Washington, “I'm wondering whether to come get my daughter or to leave here there.” I said, “Well I can't tell you which to do.” I said, “Let me read you what the President's office said” – what the Administration said, the statement. So I read the whole thing, where it said that there'd be a series of seminars and various other things like that, and he said, “Well that's a far cry from what my daughter told me on the telephone.” [*LM laughs.*] “I think that I'm going to leave here there.” And he then said thanks, and



something to the effect that he'd worked for the State Department and he knew how difficult all this had been, 'cause they go through things like that every so often. Somewhere along the way Sunday morning, a trustee called. Um... Good Lord, any other time I could think of his name. *[Pause.]* Milt Davidson called and he said John Davidson and it didn't sink in right away, and then he said Milt. "Oh yes, I know you well." "Well you tell – Don't bother Sam, tell me what's going on." I filled him in generally. "Well, will you tell Sam that if he needs help, anything I can do, to give me a call" And I appreciated it at that point. And then there was a call from somebody on the Parent's Advisory Council, in New Jersey, who'd been getting calls from parents, and he said, "I've got all these people on my back, and they've put us between a rock and a hard place", and I guess that's where I got the expression. But he was really adamant, he says, "I need more information", and he says "if you can do anything to get some more decisions than what's being done" – in terms of, on the one hand saying classes are on, but you can go home – "I'll be happy to call back all these parents and students and parents that have called me. I'll pay for the calls if you'll get the word to me." And I said, well, I will as soon as I can. And then I called him later when the word was out, and you could almost hear the sigh of relief on the other end. *[LM laughing.]* He said he'd get to them all.

INT: I'm going to take you back a little bit. I had asked you how you felt about the media handling. How did you feel about the government officials' handling?

NAR: Well, I guess, like media, you have to make distinctions between government officials. I guess I wasn't paying that much attention to it, except what I heard on the news. And I knew that everybody sounded like they were going everyway for Sunday. *[LM laughing.]* Friday and Saturday, too. I had some sense that things were being done to prepare for an evacuation, but that's largely because of some people I know, rather than because of what I heard on the news. And again, that had to do with at least some word from Sam Banks when he'd come in after their administrative meetings. But the biggest thing that sort of set me off and made me more concerned, my level of concern was increased, was Saturday night, at ten-thirty or eleven o'clock, when I got ready to go home, I got up and got in my car, and went down around the corner down by Denny Hall and saw Bill Alwood's yellow fire chief car coming the other way. So I blinked my lights and pulled over, and just – we walked across the street, and I said "how's it going?" And he said, "Well, this is not for public consumption, but they're making preparations for an evacuation in case they need to do it: the word will come from the governor if it's to be done, but Carlisle will receive people, and they're talking about the population of Carlisle doubling", or something like that, but it was a fair number, and I guess that's when I realized – things were *really* serious. But then at the same time, I felt reassured that they were talking about Carlisle as a place to receive people, rather than to get rid of people. And I found myself referring to that in general terms, without being specific, the next day when parents called, I'd say, "Well, I understand that if there's an evacuation, we will receive people." And I'd say, "we're 25 miles away." A number of people asked, "How far away are you?" "23 miles away."

INT: How did you feel about the industry's handling of it? Did you have any...

NAR: You mean the power industry? Well, I had a sense that they were being pretty glib and down-pedaling the whole thing. And I guess I felt some sense of relief when some people from NRC, I guess on the of it surface at least, “doctor”, in quotes, Denton... is a hero of some sort, I don't know as I'd blow it up quite to the proportion that it has been, I see here today that he's received a second honorary degree in just, you know, within a week. *[LM laughs.]* ... Well, at any rate, I felt I was getting somewhere closer to a straight story in all of this mad mess.

INT: That was what I was going to ask you, was there anybody in the public sector in effect that you came to have *some* more of a reliance on than others?

NAR: Yeah, I guess it's him, when there was some attempt made to – to give the straight story a little better

INT: Do you have any sense of why you felt that?

NAR: Well, I just got the feeling that he was giving a little more information, and as a scientist it sounded at least as though he knew what he was talking about, in terms of how the damn thing operates.. And early on I got the sense that well, we got a problem, but it isn't much of a problem, and everything's alright. Then you'd hear that they'd measured some fairly high level of radiation next to the plant, and it didn't fit. Somewhere along the way we ought to say something about the Dickinson people in the Physics Department and their role in calming, too.

INT: There's a place for that. Yes.

NAR: You mean later on. Okay, I'll wait.

INT: Did you feel that those in charge were in control of the situation?

NAR: I had some sense that they probably weren't early on, but I got more a sense that they were – at least had some competent people there by Sunday. And I think that has to do with Denton and NRC people being there and hearing what they were doing, and what they were trying to do, and having some sense that at least there were some competent people that had been brought in *if* the power company didn't have competent people. I really didn't have a basis to know beforehand. So it doesn't mean that I think they're incompetent, I tend to be middle of the road I guess, and leave that to final judgment, the people that are looking into the whole thing, but information you got had come through several sources, so – so how do you know?

INT: You felt some conflicting?

NAR: Mmm-hmm, early on, especially.

INT: Do you feel now that they were in charge? In control?

NAR: Well, I listened last week to the Kennedy Commission Hearings off and on, while I was in here, and heard them interview the guys who were in the plant at the time, and I have a sense that they tried their darnedest, but they were probably in over their head. And probably from all I hear, heard of the commission hearings, their equipment to tell what's going on isn't as good as it ought to be.

INT: Are they in control now?

NAR: Well, from my perspective they are, I'm still worried about what they're going to do with all that damn radioactive water they got over there. But my sense is that they're in control, and I had a sense that they were in control for – from I guess about the time they said they had the bubble size reduced, and had started to calm things down, what, middle of the week after the event had occurred.

INT: You've described several different ways in which your ordinary routines were changed by the whole event, can you think of any others? Were there any others?

NAR: Well, that whole next week the routine was changed from teaching classes in the normal way. Aside from that I didn't have major changes in my routine, aside from what I did over the weekend.

INT: You said you thought briefly about leaving. Did you think about what you wanted to take with you?

NAR: I guess not that much. I never got to the point of thinking of well, I ought to go and pull so much money out of the bank or anything like that. I don't remember even getting out any clothes, I didn't pack a suitcase, I didn't put my toothbrush somewhere... that was all at home, and I figured if I was going to git, I'd git – git the way I was gittin', and not worry about that other stuff. There wasn't any particular valuable thing that I pulled aside to take with me or anything like that.

INT: Was there anyone around you, either immediately or media or whatever, is there anyone around you during this that you were watching in order to decide what you were going to do?

NAR: I don't think that I was particularly watching anybody in that sense, that I had a barometer... On the other hand... I think for the College in general, and I guess probably in some indirect way, I found the fact that the physicists that were helping out, Neil and John and Priscilla, that were helping out with these information sessions, their presence said to me, well, things are okay, and if I had heard that they were thinking about getting the hell out of here then I'd have probably thought a lot more seriously about it than I did. And so, their handling the thing in a reasonably neutral way probably didn't do much by the fact that they were here, except that I was impressed by how they

handled questions and answered things frankly to people. I don't think that was a strong magnet in that sense, but on the other hand, had they said, "hey we ought to be worrying about getting out of here, or be ready to move at a moment's notice", I think I'd have listened to that pretty carefully.

INT: Did you have any mental pictures of what was happening at TMI or what might happen there?

NAR: No, not really. I didn't, if you're thinking of the sort of thing of blowing up or something like that, no, because I have some sense that what would happen at a nuclear power plant wouldn't be like a bomb blowing blast. And I think that's because of my scientific background. I found myself occasionally saying, well, which way is the wind blowing, and I had some sense that the radiation was going to travel through the air and even saying, well, if we had a wind of such and such a speed, how long would it take to get to Carlisle? How much time would I have if I heard it immediately on the radio, that something wild had happened? And then I tried, partly because people were asking me questions about it, as a scientist, I tried to say, well, what would happen if there were a meltdown. Well, meltdown was something that hadn't been in the forefront of my mind before Three Mile Island, but somewhere along the way on the weekend, I got a call from a guy from *The Village Voice*, who knew Priscilla, and Priscilla had referred the guy to me, I think this was Sunday, and the guy was really thinking ahead. He was trying to figure out what *would* happen if there was a meltdown, and he wanted to know where various towns got their water supplies, what would happen to groundwater, things like that. I don't know if there was ever any story done out of it or not. But he was thinking about well, what would happen, beyond? And I guess I was impressed that somebody was – a press person especially, was thinking about these things, and somehow *The Village Voice* calling me up sort of – had me a bit puzzled too [LM laughs], but at any rate I found myself saying, "Well, different towns get their water in different ways, some get it from groundwater, some from surface water like Carlisle", and he wanted to know more about Harrisburg, and I said, "Well I know Harrisburg has a reservoir up in the mountains north of town," but I didn't know what other sources they had, and that he'd better be checking with somebody in that area if he wanted to know about the places closer on, as it varies from place to place. So I was talking about, thinking about that sort of thing. And then somebody wanted me to talk about it for these seminars that we did the following week, so I thought about it a bit then, but I found myself feeling as though I was being – stretched a little.

INT: Okay. You saw this as a remote possibility.

NAR: Yeah, I got accosted by one of the guys from *The Sentinel*, who later in the week, in fact, that I was during your session where you made your preliminary report on Friday, the following Friday, the week that we were suspended. He wanted, had to go and wanted to know, well, "What would be the worst case? I'm doing a story on the worst case." And I found myself thinking that the worst case was *so* – far-fetched to me,

particularly at that point, that it was hardly worth dealing with the kinds of issues he was asking me about, groundwater and things like that. People's images of what would happen if this thing melted down were – very strange.

INT: We've got a lot of that information. Did you think anything that happened over there might have affected your health?

NAR: Why don't you rephrase the question a little bit better, to clear it up?

INT: Yeah, I'm going to try to make two time distinctions. Do you think that anything that went on there actually affected your health? Or could have?

NAR: I think probably not, as I read it, there's some very small probability. All I hear about radiation in this area, there was so little that it isn't – I'd get more going to Denver, something like that, higher altitude than I would from that, so it's really not anything that bothers me that much. I recognize, on the other hand, that there are potential problems from exposure to radiation, and the... **[END OF SIDE A]**.

INT: Now we are. Okay. Now, you were talking about what – how radiation could affect health.

NAR: Well, they're so far down the road, the kinds of effects that we're likely to see, the low levels of radiation.

INT: In other words they're future sorts of things.

NAR: They're so far future that I don't think that we've got enough data – aside from something like the effects on Hiroshima victims or something of that sort, that we really don't know. And I guess that's a bit scary, that you *don't* know. But... as a scientist, I understand what statistical probabilities are, and that I might be on one side or the other side of it, but from my point of view right now - Based on what I've heard about the thing, I think the effects on my health are minimal,. I'm concerned about what they might have been had something else happened.

INT: That's the next question, and you've talked a little bit about this, maybe you've said as much as you want to say, but if the worst had occurred, what do you think might have happened?

NAR: Well, it depends on what the worst is.

INT: That's one of the things we want to find out – what you would take to *be* the worst.

NAR: Well worst would be meltdown. And in that case, I, in order to say what would happen, I'd want to say a lot about what's upwind and downwind. Upwind, maybe not much. Downwind, my view is that – over a period of time, there would have been effects on vegetation, loss of – ah, defoliation, for example; effects on animals, on people. I

think one of the worst things, though, would have been the wild panic of the people trying to get the hell out of there. And I found myself saying over and over again on the weekend, when I was answering phone calls, that I was really *more afraid* of what would happen if they say, “We’re going to have an evacuation,” of all these people backing out and running into somebody, and all the other things like that...

INT: So you had some mental images there.

NAR: ...than I was of, than I was of the effects of the plant itself, based on what I was hearing on the radio. And I was really afraid of what was going to happen if they let the word out, and I have some feeling that these various, ah, get pregnant women and children out, and so on, and closing schools were preparations to get at least some people out, so that most – and moving people in old folks’ homes – so that most of what was left was reasonably able-bodied people that would be of a manageable size to move. And that they were buying time as they went along, I had some sense of that. Well, they didn’t need to use it, decided not to in the end. But that really worried me a lot more. I’ve just read enough about, I thought about things that I’ve read about, what if we predicted that there was going to be an earthquake in San Francisco, if geologists could do it that well – that there’d be an earthquake in San Francisco within a few hours to a day. And there’s been a lot done to try to figure out how people would react, and then the further problems, in that case, of – what if it turned out to be a false alarm, whether you could get them to do it again, but a fair bit of the psychology of behavior during things like that is in literature, it’s not in the field I read regularly except for this question.

INT: Did those things occur to you during the...?

NAR: Oh yeah. It was in that context that I said these things, to other people over there in Student Services, when we were answering phones.

INT: Did you have any concern about the food or milk from the area?

NAR: No, because from what I heard on the radio, said that they were testing it and it was okay.

INT: Did you think about your own death?

NAR: My what?

INT: Your own death.

NAR: No.

INT: Of any others? The death of others?

NAR: No.

INT: Did you think you would survive?

NAR: Sure.

INT: What reassured you?

NAR: I don't know as anything reassured me.

INT: It just didn't occur to you?

NAR: It didn't occur to me. It never got that far down the way, I was more concerned about dealing with things as they were going on, and I thought if I can help keep some calm in things, help some other people that were concerned, then that's what I would do, I guess, I don't know.

INT: Did you think about God during the incident?

NAR: No, I don't think so, I don't remember, I didn't pray or anything like that, but I tend not to.

INT: Did you feel that you, well you've said some of them in fact, did you feel that you had certain responsibilities during the incident, for example to your – well, your job, others in the community, you certainly behaved as if you did. Did you see any others there?

NAR: Well, the only other one I felt was that my folks up in Vermont, I figured they'd see the news on television and wonder, well what the hell's going on, how is he, and so I found myself calling them up saying, "Hey, I'm okay, if you hear they've evacuated, I haven't yet, and I'll get the word to you if I've moved." Something like that, it was that kind of responsibility, but beyond that, I guess I might have seen my responsibility differently if I'd had a family. But as it was, that's what I did. I really didn't think about it that much. Partly I think it was just something to do, and my mind was on that, so I doubt that I'd have got much done if I came into the office and sat here trying to...

INT: So you were definitely distracted by it and so forth?

NAR: Yeah, yup.

INT: You've talked about how your work was affected right there and in other places and how your job was affected, and you've also talked at length about having things which you otherwise would have not done, doing things that you otherwise would have not done. Did you have at any time any feeling that your behavior was being informed by an ethical or moral code of some kind?

NAR: I guess maybe, I don't think it was that strong, but I guess it goes back to what I said about annoyance at other people who left, and I felt some obligation to keep the

people here informed about – Well, I felt that others had the obligation to at least keep us informed that they had left and where they might be reached, or where they'd gone. That's where I finally ended up being sorted out, and the ones who just disappeared and never let us know where they were, those were the ones that I was really sort of put out about. Champed at the bit for a while, but then when Candie called, finally, I didn't know where they were for several days, I found myself being milder-mannered than I expected to be from my reaction a couple days before. By then, I had sort of figured out what I was going to say, cause I kept frettin' about it and stewin'. *[LM laughs.]*

INT: Did this event bring to your mind, anytime during it, apart from the ones you've named, you talked about the Kent State business, you've talked about thinking about FDR's speech... bring to mind any past experience of your own, or past historical event?

NAR: Well the only other one that I guess I mentioned in the context of the news media that I think of, besides the two you just listed, was the Agnes flood, which was a very different kind of thing, and I found myself thinking about that. These were the kinds of things we talked about over there while we were between phone calls. Making a contrast between Agnes and this, in which Agnes at least you could see how high the water went, and in this case it was something you couldn't see, and so people seemed much more uncertain about it. In the case of the water, you know that if you go on top of the hill, you can get away from it, or go uphill, or something, and I've since heard Sam Banks make a marvelous analogy of a stream that you can't see, and the water's going up and down but you're only measuring it by some monitor that's an indirect thing that somebody, only highly trained people can read.

INT: The following question was, was the incident more or less frightening than say, a flood, or a hurricane, or a war, or something like that?

NAR: Well, I don't think that it was more frightening to me, I thought that's... I'm not sure I was ever frightened, it was more just concern than fright. Puzzlement., wishing I had more information, how does it work, what would happen if, and so on, that kind of thing.

INT: Did any TV shows or movies come to mind? Or any books, stories...?

NAR: Not many. I've heard you guys' report already, so I'm trying carefully not to...

INT: You're contaminated. *[Laughs.]*

NAR: ...not to put that in, but the one thing, not really books or TV shows, and I don't go to the movies that much, I can't, didn't think of any movies that were analogous, and I know enough not to put a... say a bomb-like image into the thing, so that didn't hit, the only... But, on the other hand, I found myself looking for something like that, and I just said, I know enough not to put a bomb-like image on... *[LM laughing.]* I realize now I'm putting my foot in my mouth... The ones that came to mind were Tom Lear's "We will all go together when we go" – *[LM laughs]* – and, well that's the main one. "Wear a



pair of Levis over my lead BVD's", and so on, we found ourselves trying to reconstruct that at one point in the room with the phones. Other than that, not much.

INT: Did you have any daydreams that you remember?

NAR: I don't remember any.

INT: Did you have any sleeping dreams that you remember?

NAR: No.

INT: Was your sleep disturbed at all?

NAR: Not that I remember. Usually when I hit the hay, I hit it hard and that's it, and I guess I was tired. I know Monday, all of a sudden, even though I'd got a fair amount of sleep I thought, both nights – all of a sudden Monday sometime midday, it hit me and I felt just tired to hell all over. And I'd finally relaxed, I guess, and found myself going home, going to sleep earlier than usual, which is pretty early for me

INT: You have variously addressed this in the course of the interview, I want to come at it as a separate question in itself. What changes happened to people around you during the incident?

NAR: Well, I saw lots of different changes in different people. Some people seemed to be very calm, others seemed to be upset, different kinds of upset. For a scientist who understands nuclear power plants, at least in principle, to be concerned and concerned about their children and leave town, caused me some concern. Concern for them, that they were that moved to move. I saw in students, whom in most cases I'd just gathered didn't understand what was going on, upset in a different way, a series of various phone calls. I heard of students doing things that I thought were – I guess to them they were rational, but I thought were a bit odd. Like I had a parent call – and I should add that these phone calls were just plugged through to whoever happened to answer them, so they weren't directed to me in particular. And the other people, the major ones over there, might have some interesting other stories, but this parent called, I guess it was Saturday – and said, "My kid left last night with several friends, they got in the car and drive out to Breezewood, and they're in a motel in Breezewood on the turnpike. Should they come home – we're in Connecticut – or should they come back to college?" I said, "Well, I can't tell them what to do", but I was just a little startled to realize that kids were just packing up and driving to somewhere in the middle of nowhere. Obviously just to go away, and hadn't really planned where they were going,. Except away.

INT: Did you see any other kinds of changes?

NAR: Well, I saw other people who seemed to take it very calmly and feel as though well, we've got to do what we can to help and do our job and all the rest, and I saw most of the college administration doing that. I saw several people who had families spending,

I think, far beyond their call of duty for the College – that had families when I didn't, but they were over here doing their thing. I guess in some cases, some of them had gone away, I don't know. I don't know the details, but...

INT: Do you think it changed people in any lasting way?

NAR: I guess so, but I'd be hard pressed to tell you how, because I think that's going to vary markedly from individual to individual. But I think most of them will remember it for a long time. Just as the friends that I occasionally ask about former students who graduated or were here during Kent State, most of them remember that very vividly. They can almost tell you almost to the word what Bud Rubendhal said that evening to them. They remember that.

INT: Did the incident change you in any lasting way?

NAR: I don't know. Have to ask me that in ten years or so. I don't know. It hasn't turned to me someone who is just a total rabid, no-nuke person; it's probably turned me into somebody who's a lot more concerned about it than I was before. I was already concerned about the problems of disposal of nuclear waste, which was something that geologists have more to do than operation of the thing. I've always said that was one of the biggest problems. It's made me more concerned, since I've heard these hearings – the Kennedy Commission hearings about how up to date these things are, and the safeguards that they have in them. I guess I just assumed they were all there, and I think there are a lot there, but some of them were probably the wrong ones. Somebody sitting back and seeing the broad overview. That isn't changing *me* – changing my perception of some things. Beyond that, I'm not sure it's changed me much. It's one more thing that's gone into my storehouse and I may call on when I learn from it someday along the way, but I just don't see that it's turned me into a different person in any major way.

INT: Do you have a position on nuclear energy? You've said you're not anti-nuke, do you want to state that...

NAR: Well, I think I was neutral before. It may have turned me somewhat more against than I was before, but as somebody who's concerned – whose profession is concerned with finding some energy sources, oil and coal, and things like that, I realize there's trade-offs with all of them, and I just don't quite know where we're going, because we're going to have troubles with whatever we do. I read in the paper yesterday, even though we've got a gas shortage, a fuel shortage, you read in the paper yesterday that EPA's standards for coal-fire powered plants are going to start to be applied this summer and a number of the coal-fired power plants in Pennsylvania probably won't meet the standards. Well if we're saying that we should be going for more coal, because there is a lot more of it than oil, then what are we going to do? We're going to have to either loosen the standards or put some new scrubbers or something else on the stacks that cost lots of money; there are tradeoffs wherever you go. I'm not sure that I'm willing to close the door on nuclear power yet, but it's probably been clicked down a few notches in terms of my feeling that that's the best way to go at least as the plants are now.

INT: Did you hear any jokes about Three Mile Island or about radiation?

NAR: Yeah, but most of them were from going to your session.

INT: Let's let them go then.

NAR: I was one of the people that submitted the "I survived Three Mile Island, I think" slogan for the T-shirt. And that, as far as I know, originated, at least in my mind, it originated somewhere in the breaks answering telephones. We said something about, we could make, somebody could make some money selling T-shirts when this thing was over; what would they say? ...something like that. And I don't know whether the suggestion to Cavanaugh for the T-shirt thing came independently or not, but I know that we talked about it long before I heard Cavanaugh talking about it. Only I just didn't have the get-up-and-go to do it. Somebody else had that. And somewhere along the way, I think that somebody else said, "I survived Three Mile Island" and I added the "I think", as far as I know.

INT: That was in the context of the group working there?

NAR: Yeah. In the context of the group.

INT: Dan you remember any others in that group?

NAR: Well, there was the Tom Lear bit, there were various... *[Laughs.]* ...um... references to all of the words that come from nuclear power that we use in other contexts. Fallout – the fallout from this will be really terrible, the political fallout, or something like that. And at one point I answered a phone call after this incident Saturday night in which they said the whole area was going to be evacuated, and something had happened to the hydrogen bubble. It turned into a big thing. We got a number of calls about how the bubble's doing. From students. But anyway, a student called up and I got the thing, and the student said, "I heard the hydrogen has blown up", or something like that – "Can you tell me about it?" But they were all upset and I had heard the news report just three to five minutes before, and it hadn't said that, it had said there was a hydrogen bubble, a number of things like that, but they sounded as though the whole damn thing had blown up. And I found myself saying, well, no that's not the way I heard it, and then I went on and said something about well, we think the news media have blown this whole thing up out of all proportion. *[LM laughing.]* And the kid on the other end was totally serious; I didn't realize what I was saying, but I found all of the people sitting around me listening to me, just doubling up on the floor, in my misuse of "blown up", *[LM laughs.]* after telling the kid not to talk about blowing things up. Well that's the level of jokes we had, and I didn't hear

INT: Various puns, depending upon the differences in words?

NAR: More puns, and I didn't hear about these sick jokes until some of you that were collecting them. I was isolated in the back room so to speak, and they weren't something that got to me. I didn't hear any of the, the dead baby and the flipper jokes and that sort of thing. I spent two days trying to find out what a flipper joke was, after I heard about it.

INT: *[Laughs.]* That tends to be isolated in a certain age group.

NAR: Well, I'm obviously the wrong age.

INT: Is there anything else you'd like to tell me about all this?

NAR: *[Pause.]* I think I've – done it all, I can't think of other things.