UNITED STATES OF AMERICA

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NUCLEAR REGULATORY COMMISSION

ı	In the Matter of:	
2	IE TMI INVESTIGATION INTERVIEW	
2 3 4	of Harold L. Wilson Maintenance Foreman, Nuclear	
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8		Trailer #203
9 10		NRC Investigation Site TMI Nuclear Power Plant Middletown, Pennsylvania
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12		May 23, 1979 (Date of Interview)
13		July 4, 1979
14		(Date Transcript Typed)
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22	NRC PERSONNEL:	
23	Anthony N. Fasano James S. Creswell	°°9 201
24	Owen C. Shackleton	
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SHACKLETON: This is Shackleton speaking. This is an interview of Mr. Harold 1 L. Wilson. Mr. Wilson is a maintenance foreman nuclear with the Metropolitan 2 Edison Company assigned to the Three Mile Island Nuclear Power Station 31 primarily working in Unit 1 Instruments Department. This interview is 4 takin place at 3:02 pm eastern daylight time, May 23, 1979. The place of 5 the interview is Trailer #203 which is located just outside the south E security gate of The Three Mile Island Nuclear Power Station. Present to 7 conduct this interview from the US Nuclear Regulatory Commission is Mr. 8 Anthony N. Fasano. Mr. Fasano is an Inspection Specialist, Performance 9 Appraisal Branch, Inspection and Enforcement Reactor Construction Inspection. 10 Also present is Mr. James S. Creswell. Mr. Creswell is a Reactor Inspector 11 assigned to Region III. My name is Owen C. Shackleton. I'm am a Investi-12 gator assigned to Region V, just prior to placing this interview on tape, I 13 gave Mr. Wilson a two page document from the US Auclear Regulatory Commission 14 to read which advises him of the purpose and scope of this investigation 15 and the authority and regulatory authority of the US Nuclear Regulatory 16 Commission as granted by Congress to conduct this type of an investigation. 17 This document further advise Mr. Wilson of rights to refuse to be interviewed 18 and have someone of his choice present during the course of the interview. 19 In addition, it advises him of his rights to refuse to give any form of a 20 signed statement. On the second page of this document there are three 21 questions and Mr. Wilson answered all three of these questions in the 22 affirmative, at this time to make it a matter of record on this tape recording 23 I'm going to ask Mr. Wilson these three questions orally and if you will 24 sir, please respond. 25

1	SHACKLETON: Did you understand the document that I am referring to?	
2	WILSON: Yes.	
3	<u>MALOOM</u> . Tes.	
5	SHACKLETON: And to we have your permission to tape the interview?	
6 7	WILSON: Yes.	
8	SHACKLETON: And would you like a copy of the tape.	
10	WILSON: Yes.	
12 13	SHACKLETON: Alright, sir. They will provide it to you at the completion	
14	of this interview. Now Mr. Wilson if you would please for the benefit of the record would you briefly give us your work experience and the nuclear	
16	field from when you started until the present date?	
17	WILSON: I was in the Nuclear Navy, in the Navy from 1962-1969 and the	
19	Nuclear Field of the Navy from 1964-1969, after I got out of the Navy in	
20	1969, I worked for about two years at a research facility in North Carolina	
21	State University. There was a small research reactor there. There, I was	
22	in charge of operation and maintenance of the whole reactor facility. At	
23	the end of my work period for NC State University I came to work for Med	
4	Ed, as instrumentation technican as first class and I worked in that capacity	
25	for about three years and I was promoted instrumentation foreman. That was	
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in 1974. I've been working in the capacity of instrumentation foreman from 1974 till the present time.

SHACKLETON: Thank you very much Mr. Wilson and now I'll turn the interview over to Mr. Creswell.

CRESWELL: Tony, I believe you have some introductary questions?

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FASANO: Yes, I have some questions that I'll jump in on, because I may not be here throughout this whole interview. The reactor coolant bleed tank, when you were on shift did you do any maintenance work on the bent for, what work were you doing, first of all, you're Unit 1, when the event occurred where were you and what were you assigned?

WILSON: Well when the event occurred, it happened in the early morning 15 hours and by the time I came in the Security people were holding everybody 16 at the entrance to the Unit 1 part of the complex, and I didn't actually 17 work in the plant for at least a couple of days after the event occurred. 18 I worked primary out of the observation center and at Med Ed's plant up in 19 Crawford and a repair shop up there. We had a repair shop set-up to do 20 some temporary repairs to some radiation monitoring instrumentation, portable 21 radiation monitoring instruments. Myfirst active involvement with any of 22 the systems in Unit 2 after the event, was and I don't remember which day 23 it was, it was Friday or Saturday I came over from the observation center, 24 I don't even know what time it was, right. I assisted Doug Weaver in 25

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making up some tubing to run a vent line and I believe it was from the 1 make-up tank to the, not the make-up tanks but from the bleed tank to the 2 reactor building, I believe he had installed, he had already installed or 3 was working on installation of a vent line from the make-up tank to the 4 reactor building and there were additional lines to be run from the bleed 5 tanks, and that's what I was working on at the time. 6 7 FASANO: This was after the 28th then? 8 SI WILSON: Yeah. 10 11 FASANO: So the day of the event you worked you weren't onsite? 12 13 WILSON: No, I wasn't onsite the day of the event, I worked out of the 14 observation center for a couple of days. 15 16 CRESWELL: You mentioned that Mr. Weaver had connected a plastic line or 17 was involved in the connection of a plastic line from the make-up tank to 18 the reactor building. When was that installation made. 19 20 WILSON: Must have been the 29th or 30th. I'm not sure of the date. He 21 was over here all those days. Him primarily, rather than me, because he 22 was more familiar with Unit 2. He has worked in Unit 2 primarily for the 23 last couple of years and he was intimately familiar with physical locations 24 and operations of the Unit 2 systems moreso than I am. 25

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<u>CRESWELL</u>: Okay, I'd like to discuss the operation that you were involved in, and that was I believe you mentioned, the running of the plastic tubing from the bleed tanks back to the reactor building. Is that correct?

WILSON: The tubing that we were running when I was here was not plastic. 5 It was hard tubing. We had to get some hard tubing, copper, stainless 6 whatever we could get at the time, and we were running hard tubing. My 7 involvement in it was more one of procurement and assembly rather than 8 actual installation. I didn't do any of the actual installation. Doug 9 weaver and a couple of his men, or one of his men, I don't know who it was 10 right now, was involved in the installation of the thing and I'm not quite 11 sure, but I don't think at that time, it got installed. We were putting 12 pieces together. Someone had gone to the location the tubing was to be 13 terminated at, it must have been at the reactor building, and had come up 14 with some rough measurements and how the tubing would have to run. We 15 preassembled some of the things that would have to go up in the air, you 16 know off the floor that a guy would have to get to from a ladder or something. 17 We preassembled some of that material in the shop. Other than procurement, 18 the preassembly of the material was what I was involved in. 19

CRESWELL: Did anyone tell you why the tubing had been run?

WILSON: It is my understanding that the water from some place or another was getting into the makeup tank I guess from let down or something, it had got into the make up tank. The level increases had lifted the relief value

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and that's why the tubing had been run from the makeup tank and basically 1 the same sort of thing was happening in the bleed tanks. I don't know if 21 there was any concern with hydrogen at that time or not. 3 4 CRESWELL: Okay, and this was you believe Friday that it happened? 5 6 WILSON: Either Friday or Saturday it would have been done. The 30th or 7 the 31st. 8 9 CRESWELL: I see. Where would you make the connection into the reactor 10 building? 11 12 WILSON: Again, I don't know exactly. There was a prechosen by someone 13 else, who I don't know, operations, Weaver, a place to make a connection. 14 Maybe some test-fitting on a building penetration of some sort, I don't 15 know. Maybe building ventilation or something. I'm not sure. 16 17 CRESWELL: Who gave you your assignment to do this? 18 19 WILSON: The job was being worked when I got here and I just kind of picked 20 up on it. I'd had instructions to come over here and help and that's what 21 I did when I come over here to help. That was the primary job being done 22 at the time or one of the primary jobs. A job that needed help in procure-23 ment and assembly and that's just kind of where I fell in. So I don't know 24 where the instruction came from. 25 009 207

FASANO: Did you know of any job with the reactor, the hydrogen recombiner? 1 Did you get involved in that at all? 2 3 WILSON: A couple of days after that I got involved in a job with the 4 hydrogen recombiner. There was a, I was involved in the installation, 5 again from a procurement end, installation of a spare recombiner or the 6 spare recombiner as a second unit. Either a second unit or a backup unit. 7 Procurement of tubing to hook the thing up with, procurement of some cable 8 to run a thermocouple to read the temperature of the recombiner. 9 10 FASANO: Were you involved at all with the Install hydrogen recombiner. 11 12 WILSON: No. 13 14 FASANO: How about any work on the seal injection fixtures? 15 16 WILSON: No, I wasn't involved in that at all. 17 18 CRESWELL: I'd like to go back to the day of the event, you said you were 19 at a fossil plant near here. What was the name of that facility? 20 21 WILSON: It was Crawford station. The day of the event, most people who 22 showed up at the Island after the incident happened, I guess they probably 23 started getting in here around maybe 6:30 or 7 o'clock, held at the entrance 24 to Unit 1, monitored by HP or somebody to get off the Island and were sent 25

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to the substation across the road just south of the observation center. 1 Most of us were held there waiting to be monitored, waiting to be checked 2 out until sometime in the early afternoon and at that time, then after I 3 got cleared out of there, I went up to the observation center and I was 4 there all day. The next day when I came in there were logistics problems 5 to say the least, in trying to operate everybody out of that place and 6 sometime during that day, either then or very early the next day, the 7 maintenance people who weren't on the Island doing jobs were sent up the 8 river to Middletown to an old plant that Med Ed owns, was operational up to 9 about three years ago, called Crawford Station. The instrument people set 10 it up, a repair facility for ... 11

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13 <u>SHACKLETON</u>: Excuse me. For the record the time is now 3:19 p.m. and 14 Mr. Fasano is having to leave the interview. Sorry, Mr. Wilson, continue 15 please.

WILSON: The instrument personnel set up a temporary repair facility to do 17 repairs on portable radiation monitoring equipment. We drew what spare 18 parts that we had that we knew we would most likely need out of our warehouse 19 here. We took those up, we took batteries up, we took cleaning agents, 20 drying agents, and repaired some instrumentation that was broken down. We 21 would repair it, send it to the observation center, from there it would go 22 off some place down in Maryland and be calibrated and sent back to be put 23 into service. Our equipment was in pretty heavy usage during that time. 24 We had to keep it operational.

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CRESWELL: Approximately how many instruments did you repair that day?

WILSON: I have no idea. We would, most of the repairs, a lot of the 3 repairs were simply changing batteries and things like this. Things were 4 in very heavy use. A group of instruments would go out with a radiation 5 survey team and they would be used rather heavily, they'd come back, some 6 would be operational, some wouldn't. Most of them were battery problems, 7 either the battery came out of it holder, dirty contacts, batteries low, 8 maybe a GN-2 from Milar, had a hole punched in the Milar or something like 9 that. We did those type of repairs primarily. How many instruments I have 10 no idea. The shop was only in operation maybe two or three days and then 11 there was a problem with, the calibration facility from Maryland or somewhere 12 came in and took over the repair of these things. And we became more 13 actively involved in work at Unit 2. 14

CRESWELL: Mr. Wilson, who directed you to perform this task?

<u>WILSON</u>: It came about more out of necessity rather than any direction from anyone. There were a lot of instruments broken and either broken or not operational and we knew something had to be done, so we just did it.

CRESWELL: Of your own volition you set up the shop?

WILSON: Yeah.

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<u>CRESWELL</u>: Did you report to the Unit 1 EC? I'm not familiar with the proper term, the emergency...

WILSON: ECCS. Emergency Control Station?

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<u>CRESWELL</u>: That's the correct one, yes. Did you report there when you came onsite?

WILSON: Yes, we did. For the most part, our directions to come onsite 9 came from the ECS. How they got the word, I suppose, was from people in 10 the control room, not only Unit 2 but occasionally Unit 1. Our policy at 11 the time in order to minimize confusion and keep as many people out as we 12 could and only send in those necessary to do jobs we would send people in 13 to do specific jobs. Whether or not they picked up another job or two 14 while they were here, you know, that was all right. Generally, we had at 15 least two or three people here at the facility all the time. Most of the 16 time they were working on a specific job. Like running the tubing from the 17 makeup tank, bleed tank, hydrogen recombiner, whatever. During that time 18 period also some work got done in Unit 1. Some work on radiation monitoring 19 was done, I don't know maybe the evaporator, _____ water evaporators and 20 things like that. We didn't really get back into actively doing things on 21 full time assignment, reporting into the island until sometime around the 22 middle of the next week. I think it may have been Tuesday, Wednesday or 23 Thursday of the following week, I am not really sure. 24

<u>CRESWELL</u>: About what time would you have been in the emergency control station?

WILSON: Well we weren't actually in the emergency control station. We 4 would receive instructions over the radio or telephone from the ECS that 5 they had called over to the observation center. If we were at the observation 6 center or at the Crawford Station, we would get the call in from the ECS or 7 from the observation center on two way radio. We would work in conjunction 8 with the observation center ECS, we would let the ECS know we were coming, 9 who was coming so that the could be cleared in through the north gate, 10 where they were going, what they were going to do, and that sort of thing. 11 Like I said most of the jobs ended up in the Unit 2 control room or through 12 Unit 2 control room. A few jobs through Unit 1. 13

15 <u>CRESWELL</u>: Do you know approximately what time you came onsite through the north gate?

18 WILSON: No, I don't. You are talking about the day I was involved with a bleed tank job? Or any other particular time?

21 <u>CRESWELL</u>: I was speaking of March 28th.

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WILSON: Oh, March 28th. It must have been somewhere maybe between 6:30 and quarter to seven in the morning.

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CRESWELL: So that's about the time the site emergency was declared? 1 2 WILSON: That's right. I was coming in through the processing center. I 3 heard the word passed that there was a site emergency. I forget exactly 4 what it was, but there was the word passed to the effect that there was an 5 emergency, radiation type. I talked to a couple of guys on their way out, 6 I guess probably before I got to the processing center. I talked to them 7 and they had said something happened, not incoherent or anything like that 8 and they weren't panicky or anything like that. But at the time, I didn't 9 pursue it. They just said they had problems in Unit 2. They wern't real 10 familiar with what the problems were and I figured, well, when I get in 11 there, I'll talk to the people in Unit 2 and find out what happened. I did 12 notice when I came in that morning that a plume came out of the cooling 13 tower was nothing, almost nothing. 14 15 CRESWELL: Did you pick up your TLD and dosimeter on the way in? 16 17 WILSON: I had picked up my TLD, dosimeters are not normally issued except 18 on a purge out basis type thing, but I had picked up my TLD, yes. 19 20 CRESWELL: Did you proceed up to the Unit 2 control room after leaving the 21 processing center? 22 23 WILSON: No, I was held at the north muster area which is the auditorium in 24 the TMI service building. They were holding everybody there when I came 25 in. 009 213

CRESWELL: Who was in charge there?

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<u>WILSON</u>: Some security person had muster sheets as other people came in, other people took charge. I really don't know who it was, several people senior to myself. We mustered on around, I think we may have even sent a couple of guys out to Unit 2 during the time I was held there on a request from Unit 2 control room.

CRESWELL: Do you remember who those people were?

WILSON: No, I don't. Gordy Lawrence, I believe was in there, one of the 11 other instrument foreman and I got the word from, I don't know who it was 12 right anymore, maybe Pete Snyder, Dan Sheldon, or somebody. I don't know 13 where all these people were at the time. It was pretty hectic, I guess. I 14 do know Gordy Lawrence and Mike Tool were there and either Gordy and Mike, 15 or Gordy or Mike, one of the two of them. I told them when I got the word 16 that they needed a couple of guys up in Unit 2 or Unit 1 control room to 17 take care of some problem. At the time, I knew what it was, now I don't. 18

SHACKLETON: At this time, we will stop the interview just for a moment while we change the tape. The time is now 3:31 p.m.

SHACKLETON: This is a continuation of the i erview of Mr. Harold R. Wilson. The time is now 3:32 p.m., EDT, May 23, 1979. Mr. Creswell, please continue.

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<u>CRESWELL</u>: Mr. Wilson at this point, I would like to ask you if you have any comments that you would like to make. Perhaps suggestions or recommendations that other people might consider in a similar type of occurrence involves them. These comments can be very broad in nature, include NRC involvement, any comment at all that you would like to make.

WILSON: Boy, that question opens up Pandora's box. One of the big problems 7 that I see resulted from this, other than the problem with the facility, 8 was the concern of I guess what I would classify an uneducated public. It 9 didn't reach panic proportions, maybe close to it in some cases. I think 10 one of the big, it would be a big help in the future if the public were 11 educated in aspects of nuclear power pertaining to power generation. How 12 involved this education would have to be, I don't know. I think sometime 13 that they would have to be almost as educated or as educated as I am. My 14 nuclear education came from the Navy. I was a reactor operator. I had 15 rather extensive education in things nuclear, not only from a radiation 16 standpoint, but from a standpoint of operation of a reactor. Intimate 17 details of construction, design, things like that. I suppose education 18 that deep would be kind of gilding the lily. It's not necessary. Some 19 education is necessary though, I think, at least to the point that the 20 people know and understand radiation and radiation protection. The possible 21 consequences of similar types of accidents that might happen in a nuclear 22 power plant. The lack of public education is probably a little bit every-23 body's fault. I don't know where it would start. The logical place to be, 24 I suppose, would be in the school systems. It would probably have to be 25

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nationwide though, not just around here. Or not just in localities where 1 nuclear plants are located because people are very mobile and they move 2 around a lot. I know in my case, my family wasn't afraid. We don't live 3 too far from here, but we are out of the immediate area. We are about 15 4 miles away. I think if we had lived right across the street, the situation 5 would have been the same. I've been in the business for 15 years, my 6 family isn't educated in nuclear power, so I've got a problem too. I did a 7 lot of educating my wife, over about a 2-3 day period. I think primarily, 8 my family didn't have any problem cut of faith, more than anything else. 9 They knew I had been around, I knew what I was doing, if I said it was 10 okay, it must be good. Alright. If I said they had no problems, it must 11 be alright. As far as other things, other than public education, I really 12 can't say. I don't know if I am in any position to make a qualified recom-13 mendation. My training was in three fields, actually. First, it was in 14 electronics; had training in nuclear power generation; nuclear reactors, 15 the type the Navy has; then I had training in operations and maintenance of 16 the instrumentation associated with a navy nuclear reactor; and had training 17 associated operation of the reactor itself. After that, I worked in a 18 facility, I worked at a couple of facilities, I was at one land based 19 prototype in the navy and on ship. Navy operators are also navy maintenance 20 people. The operators know the instrumentation, they know the equipment in 21 detail, not only locations but failure modes. They know design policies, 22 design reasons, and things like that. After I got out of the navy, the 23 next place that I worked was the same thing. It was a very small place, a 24 low power research facility, low budget, I guess. The maintenance people 25

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for the most part were also operators. We knew the operation of the facility. 1 We knew the maintenance of the facility. We knew the locations. We knew 2 3 how the instruments worked as operators we knew this, ok? For the most part, the primary operators at least. Not only knew them from an operations 4 5 standpoint but knew them how they worked. What's going to happen if this valve fails or gets something wedged in it, or how you can tell that valve 6 is not open when the indicator says its open. Quite frankly, when I came 7 to Med Ed, it was my first experience with a commercial nuclear power 8 generation. I had some problems with it. My problems were this facility 9 got built and put into operation. My problems were the fact that the 10 person who operated the plant, who had the prime responsibility for operating 11 the plant, I'm not talking about as a boss, I'm talking about as an operator 12 was the guy with his hand on the handle. He's got a hell of a lot stuff to 13 look at. He's got the control room that must be about 50 X 50 feet of 14 panel that goes for maybe 20 or 30, 40 feet long, 8 foot high. Even though 15 we got an automatic system and I'm the first one to agree that an automatic 16 system will control a plant either a very complex plant or a very simple 17 plant much better than an operator at every station or at every component 18 could ever do, but that guy with his hand on the handle has got a lot to 19 look at. What I've seen of the power plants that I've been at, there's not 20 that much, the centralization and location of controls and indicating 21 devices that are associated with the different parts of the plant like the 22 reactor controls or the turbine controls. They are all over the place. 23 Okay, they are sort of centralized, but not as much as it could be, I don't 24 think. I also got a problem with the fact that operations people aren't 25

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maintenance people. They don't know the plant to the degree, I guess, that 1 I was trained and I was made to know it when I was an operations person. I 2 don't know if its even feasible. You know, we are talking about union 3 things, we are talking about money, we are talking about lots of money. 4 I don't know maybe nuclear power generation is not economically feasible. 5 I don't know. I know it costs a lot of money to do what I think ought to be 6 done in the field of operations and training and maintenance and things 7 like that. You know train everybody to know everything and to be able to 8 do everything. In a facility of this size, I don't even know if one person 9 could learn all that. I'm not even sure. I doubt it sometimes. I don't 10 know if I could. It would probably take years. I don't know intimately 11 the training program of the operations department. Its extensive, they do 12 have training on instrumentation, they have training in mechanical and 13 electrical but not to the point that they know every intimate detail. And 14 I think some the things that happened and some of the indications that 15 happened in Unit 2, the instrumentation and things, indicating devices that 16 indicated one thing and the operators for one reason or another made a 17 judgment call to do something. I think if they had been also good maincenance 18 people, they might have known what those indicators really tell them. 19 Maybe. I don't know. 20

SHACKLETON: Mr. Wilson, with your experience in maintaining instrumentation of the plant, do you feel that the maintenance program here was adequate? Or is adequate, on the instrumentation?

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WILSON: Again, I guess I would have to say Unit 1 or Unit 2. Unit 1 has 1 been operating for 5 years, 41/2 years, almost 5. A pretty good track record. 21 We've had some problems, still got some problems. Adequate maintenance 3 program, we look at things from a functional standpoint and from a calibra-4 tion standpoint that are directly related to protection of the facility. 5 The primary system, primary support systems. We do, like I said, calibration 6 and checks, functional checks and things of that nature. The balance of 7 the plant, we do calibration, check, and functional checks of things that 8 can shut you down in a hurry if something goes wrong with it, or things 9 that can give you a problem in a hurry if something goes wrong with it. I 10 would say that things we look at are probably maybe 50% of the equipment of 11 the plant, instrumentation in the plant, that is operational at any one 12 time. Other things we look at on the as fail basis. Some of them could 13 affect the safety of the plant, if you look at them in the light of multiple 14 failures, this piece of gear in this system and this other piece of gear in 15 another system, totally unrelated, not doing the same thing, yet ok, if 16 they both failed the same way or they both failed a certain way at the same 17 time, you know, you are going to have a problem. Some of these things we 18 don't look at. Some of these things we do. We are looking at more and more, the more we learn. We don't, for one reason or another either manpower or utilization of our manpower, we are not in a position to do all we want to do to everything in the plant. I don't think we're unique. That's 22 Unit 1. Unit 2, from a plant safety standpoint, auxiliary safety standpoint, 23 they do all the calibrations, all the functional tests that we do. They havn't been around long enough to set up a PM program, what we call a PM

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program, look at instruments every couple of years, every few months, whatever. Whatever you feel the PM requirements should be.

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CRESWELL: You're speaking of preventative maintenance programs, PM programs?

WILSON: That's right. Unit 1's preventative maintenance program is off to 6 a good start. Its not near where we want to put it yet. I don't, from a 7 standpoint of a professional, I guess I would like to see everything done. 8 From an economic standpoint, I don't know if it could ever be justified. 9 From a safety standpoint, I don't know if you could ever justify it because 10 all the gages, all the little indicators, redundant indicators, this place, 11 that place, all over the place. Some things that are not associated with 12 the plant at all, with the plant proper at all. I don't see how the could 13 in any remote way affect the safety of a plant. But like I said, from a 14 professional standpoint, I'd like to see them all operational. I'd like to 15 see them all operated. I'd like to see them all calibrated perfectly. No 16 mechanical problems with them. No electrical problems with them. Nothing 17 like that. We pick them up from time to time as they fail. 18

SHACKLETON: Mr. Wilson, in your comments you referred to some of, made the inference at least, as I understood it, to the problems that possibly in cost and in unions. And I am going back to the incident that transpired here at Unit 2 on March 28th, when the plant went through a turbine trip and then a reactor trip and the resulting investigations have ensued since then and information that has been developed and made public, do you feel

that there is any chance that there could have been any labor problem or any sabotage on the part of any employees?

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WILSON: No, I don't, not in this, not that would cause this incident. I 4 can't even envision something like that. And maybe, when I made my statement 5 awhile ago about unions and money, I should have explained that a little 6 more. When I was talking about unions, I was talking about one guy does 7 one job, and he can't do somebody's else's job because that': across the 8 union line. We're not so much that way here as they are in the trades. I 9 think there is too much of it though, but its getting better. We are 10 getting away from it. Its taking time, but we are learning a lot. We are 11 getting more and more a multi-craft organization. One of the places I 12 think is going to be awful hard to, one of the gaps that is going to be 13 awful hard to bridge will be the gap between operations and maintenance. 14 As far as sabotage causing the incident, no, I don't think so. I think it 15 was a case of multiple failure, undesigned for, unlooked at, and unthought 16 of. Probably TMI 1 and 2 comes close to being a package power plant as 17 anyone builds these days. Again, I look at the difference between a commer-18 cial power generation and a navy nuclear power. I see navy nuclear warships, 19 ships, submarines, aircraft carriers, whatever, a power plant. If you 20 would ever take the power plants out and line them up side by side, they 21 would look like rows of corn. They are all the same. Its an old design 22 tried and true and it works fine. But it cost a lot of money to get there. 23 Dollars per power unit, watts or whatever, they cost a bunch. I really 24 don't think commercial nuclear power generation will ever get there. I 25

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think its too expensive. I don't know. Now, I'm not saying that they have to be that good. Again, I don't know. But I figure, the way I figure it, its pretty heavy responsibility, I suppose, to have a nuclear power plant and it should be as good as it possibly can be. SHACKLETON: Okay, Mr. Wilson. We thank you very much for your appearance here today on behalf of the Commission, giving us your time, your candid comments and we'll bring this interview to a close. The time is now 3:55 p.m., EDT. 009 222