07-455A-91

ORIGINAL

OFFICIAL TRANSCRIPT OF PROCEEDINGS

Agency: Nuclear Regulatory Commission
Incident Investigation Team

Title: Interview of Scott Newberry

Docket No.

LOCATION: Bethesda, Maryland

DATE: Friday, August 30, 1991 PAGES: 1 - 30

ANN RILEY & ASSOCIATES, LTD.
1612 K St. N.W., Suite 300
Washington, D.C. 20006
(202) 293-3950

ERRATA SHEET

ADDENDUM

Page	Line	Correction and Reason for Correction
5	23	Change I-I to I-E (editorial)
7	23	Ganay is Ginna (editorial)
~~9~~	~~13~~	
13	12	5049 is 10CFR50.49 (editorial)
14	17/18	in some way consistent with the (clarity) control room design review methodology
16	9	suppression pool, dry well pressure, etc.
16	21-24	this paragraph is not clear (clarity) and should probably be deleted. It doesn't add to my discussion and, as typed, is not clear
18	14	AO-233 should ~~by 2887~~ be 83-22 (editorial)
29	19	signal loss should be single bus (editorial)

Date 9/20/91 Signature

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

INCIDENT INVESTIGATION TEAM

INTERVIEW OF)

)

SCOTT NEWBERRY)

)

Nuclear Regulatory Commission

The Woodmont Building

8120 Woodmont Avenue

Bethesda, Maryland

Friday, August 30, 1991

The above-entitled interview convened, pursuant to notice, in closed session at 8:10 a.m.

PARTICIPANTS:

RICHARD CONTE, NRC/IIT Team

JIM STONER, NRC/IIT Team

PROCEEDINGS

MR. CONTE: On the record. It's 8:10 on the 30th of August. We're at the Woodmont Building in Bethesda, Maryland. We're conducting interviews with NRC personnel for the Incident Investigation Team for the event at Nine Mile 2 on August 13th 1991.

My name is Richard Conte and I'm from Region I.

MR. STONER: My name is Jim Stoner and I am from Duke Power.

MR. NEWBERRY: My name is Scott Newberry. I'm chief of the instrumentation and controls systems branch in the office of NRR.

MR. CONTE: First of all, Scott, would you give a little bit of your background?

MR. NEWBERRY: Yes. I came to the NRC in late 1976 from the Navy. I first worked reactor systems branch in NRR. I of course worked Three Mile Island for several years.

I worked in other jobs, all in NRR, through the years in the areas of reliability and risk assessment, technical specifications, events assessment.

I started my current job in 1987 as chief of the instrumentation and control systems branch and I've been there since '87.

MR. CONTE: Thank you.

Why don't I let you run down the list of preplanned questions and that will get us started on some topics.

MR. STONER: When the NRC reviewed Nine Mile Point relative to 1.97, how did they come out in that inspection?

MR. NEWBERRY: Well, I can talk to the review a little bit. The review was conducted before I was in my job but I asked one of my engineers to go back and review the record.

I think basically Nine Mile Point 2's design in the review showed that they were in compliance with Reg Guide 1.97 to a very large extent. I think the only area I recollect where they were not, and that's the subject of continuing review, was the area of neutron flux monitoring.

I would expect that if you wanted to get documentation of that there would be no trouble in the safety evaluation reports at FSAR.

MR. CONTE: Let me clarify here. When the event happened, you say as the chief of the instrument control branch you had one of your engineers do a review as a result of this event?

MR. NEWBERRY: Yes. I was curious and I asked him to go back and pull the safety evaluation and the associated material on Nine Mile 2 Reg Guide 1.97 because I knew there was some concern on the post-accident monitoring

instrumentation.

MR. CONTE: What's the nature of the problem with the neutron flux monitoring?

MR. NEWBERRY: Let me go into a little bit of detail. When the reg guide was promulgated and issued for implementation back in the early '80s, I guess it was '82 or '83, it established criteria for key instrumentation and it was called Category One Criteria. Category One would mean you need to have redundant Class 1-E instrumentation.

At that time, there was no Class 1-E instrumentation available for monitoring neutron flux. No environmentally qualified system was sold or manufactured so I believe there were no boiling water reactors in this country that had fully environmentally qualified neutron flux instrumentation so it was carried -- I think we called it a developmental issue for further study.

Finally, when instrumentation was made available in the mid '80s, we proceeded -- I guess really in '87 and '88 perhaps -- I proceeded to require plants to implement this instrumentation and that became the subject of further review and appeal by all the BWR owners to the office of NRR.

MR. CONTE: Which range of neutron flux are we talking about -- source range?

MR. NEWBERRY: All ranges. The position of the

BWR licensees is that -- I believe -- there is plenty of documentation on this that we could get to back me up.

My recollection is that their position is that neutron flux instrumentation simply is not required for safety at these plants since it was never intended to perform a safety function,that the plants were designed to automatically shut down and insert the rods and if you knew that the rods were in there was no credible situation where you should have to worry about, return to critical and wouldn't need to monitor.

MR. STONER: What is the SICB position on this?

MR. NEWBERRY: I disagree. That's well documented. It's our view that it was important, that was the philosophy behind Reg Guide 1.97, that there are a set of safety functions that you should monitor in a reactor plant and neutron flux or reactivity control, which you are really worried about, is one of them and we took the position --

Actually what the owners did is they provided a topical report. The owners provided a topical report which documents their view as to why they didn't think their fully qualified neutron flux monitoring system was necessary -- when I say fully -- environmentally qualified Class 1-I power, et cetera.

We rejected that topical report, wrote a safety

evaluation and rejected that topical report and that was appealed to the director of NRR.

MR. CONTE: What were the results of the appeal?

MR. NEWBERRY: Dr. Murley decided basically in favor of the owners group. We're in the process of taking that decision and going through what we have to do on any generic change of position and formulate or prepare a letter back to the owners group and take it through the CRGR.

MR. CONTE: Has that letter gone out yet?

MR. NEWBERRY: No. It's on concurrence, as a matter of fact.

MR. CONTE: I think we will need that information, the topical report, the director's decision.

MR. NEWBERRY: We've got a whole notebook that we put together because of the long chronology on this that I will be glad to get for you.

MR. CONTE: I think the policy is whatever you provide us has to be in duplicate.

MR. NEWBERRY: That's no problem.

MR. CONTE: Let me summarize here. When Nine Mile Point 2 was getting licensed and a review was done of Reg Guide 1.97, this issue came up. I guess it was left as an outstanding issue for licensing. I guess it did not preclude startup because all the boilers were in kind of the same category.

MR. NEWBERRY: Right.

MR. CONTE: So an exception was made in the SER for the Reg Guide 1.97, is that correct?

MR. NEWBERRY: An exception -- I don't know if that's the right word but, yes, it was carried as basically a generic open item. I think the word that was used back then was a developing item. There was no qualified instrumentation available.

The problem, by the way, primarily was that when instrumentation is withdrawn after you start up and the drive motors that are inside the drive wall are not environmentally qualified nor are the connectors which transmit the information from the detectors up through and into the control room.

MR. CONTE: The other type vendors, pressurized water reactors, did they have the same problem? Did they take the NRC on on this issue?

MR. NEWBERRY: Only some of the older ones have since come in.

MR. CONTE: So the late model pressurized reactors have environmentally qualified neutron flux?

MR. NEWBERRY: I can't give you a good answer on that. I know that is a group -- Ganay and Beaver Valley come to mind -- where they've come in and argued that they don't need to go all the way in the Reg Guide 1.97 criteria

for neutron flux.

MR. CONTE: I have a general question about the licensing on Reg Guide --

If I'm repeating some of your questions, then stop me.

MR. STONER: Go ahead.

MR. CONTE: The pre-licensing on Nine Mile 2, I guess we call them NTOLs right after TMI two happened and they got put in a separate class.

Are you aware how the generic communications handled -- Reg Guide 1.97 came out with a revision I guess early '80s, Nine Mile 2 I guess was not required to respond at the time.

How was that handled from the point of view of -- Did you do separate SERs for all these TMI actions or Reg Guide 1.97 actions, or was that all incorporated in the FSAR and then it was just incorporated in the SER for the plant?

MR. NEWBERRY: Primarily the latter. Let me explain.

I was not involved in doing that but in going back on this issue and other issues to do research when something comes up I found that almost in every instance there was a submittal on the docket as part of the review.

That is, in the SER questions were asked and an evaluation is contained in the safety evaluation report that

was issued for licensing.

MR. CONTE: Let's continue down your lists.

MR. STONER: Does the NRC review the SPDS and other computer systems relative to the INC input power supplies?

MR. NEWBERRY: I'll try to answer your question as best I can. Most of the SPDS work was done before I came into my position so if you want to get into a detail, I think it would be best to get one of my staff that was involved, but SPDS -- I'm not sure.

Our role -- I can tell you what we did in the past and that was to ensure that the SPDS power, because it was non 1-E power, was adequately isolated from all the 1-E power so our role was primarily on the isolation capability and that's really about all I can tell you.

MR. CONTE: Was the SER -- I believe SPDS was one of the TMI action items.

MR. NEWBERRY: Right.

MR. CONTE: Was that incorporated in the operating license SER or was that SPDS after --

MR. NEWBERRY: For Nine Mile 2?

MR. CONTE: For Nine Mile 2.

MR. NEWBERRY: I don't know. I actually don't know.

MR. CONTE: Can you find that out for us and, if

there was a separate SER, provide us a copy of the SER for SPDS?

MR. NEWBERRY: Sure.

MR. CONTE: Jim, are there any more questions on Reg Guide 1.97 that you have there?

MR. STONER: Yes.

MR. CONTE: I'd like to have us keep to the one topics if we can.

MR. NEWBERRY: Did you want a copy of the 1.97 SER or any information on that? You asked me about the SPDS.

MR. CONTE: Yes, if it's separate but I got the impression that the SER for the Reg Guide 1.97 was incorporated into the operating license.

MR. NEWBERRY: I think so.

MR. CONTE: If it's separate, provide it. If it's not, then well get a copy of the SER for Nine Mile 2's operating license.

MR. NEWBERRY: All right.

MR. STONER: Is Nine Mile Point comparable to other BWRs with regard to the number of Type A variables?

MR. NEWBERRY: I don't know. I haven't made a comparison. I don't know.

I keep a matrix. I have a matrix of all plants in which variables are Type A's and I could provide that to you for every plant in the country. Would you like that?

MR. STONER: Yes.

MR. NEWBERRY: Can I talk to you a minute about Type A variables?

MR. CONTE: Go ahead. Please do.

MR. NEWBERRY: The NRCc position on Type A variables is that as stated in the reg guide it's a plant-specific determination that's made and we have not questioned it.

I can tell you that there are at some places significant differences in Type A variables from plant to plant, very significant differences, and it's my belief that that difference is based upon the interpretation of the criteria for a Type A variable found in the reg guide, those interpretations have varied. I'll be glad to provide you the matrix.

MR. CONTE: While we're talking about variables, the connection to the EOPs, one of the problems that we saw in the review of the event is there's a stop point in the EOPs before you cool down.

There's a caution to the operators to verify that all rods are in or at the O-2 position or below or the reactor will remain shut down under all conditions.

The morning of the event, not having an analysis that the reactor will remain shut down and not knowing where the rods were because of the confusing instrumentation, it

put them in kind of a quandary, primarily because they were using RCIC for loss feed and condensate. They're not supposed to use the high pressure core spray because that's an injection into the top of the core and may cause power spikes.

They were in the ATWS procedure. In fact, the ATWS procedure --

MR. NEWBERRY: They were in the ATWS procedure?

MR. CONTE: They were in the ATWS procedure because they did not know what rod position was and they made the assumption that the rods were still out.

Then they had indication that APRM flux was at zero. They had indications on pressure and level that a transient had occurred in the reactor so the team is focusing on rod position which is not -- I don't know if it's Type A or Category One, but apparently it's the lower categories.

The question here for you is would your branch or who in the NRC would make that connection of the Reg Guide 1.97 and how it compares to the EOPs and what the operators need to use?

MR. STONER: Control rod position indication is not Type A.

MR. CONTE: Is Type A the same as Category One?

MR. NEWBERRY: It is confusing.

MR. CONTE: Yes.

MR. NEWBERRY: All Type A -- Let me back up there. Do you have a copy of the reg guide?

MR. CONTE: We are getting a copy.

MR. NEWBERRY: The types characterize what the instrument is used for. Is it used to verify that a function has been carried out? Is it used to monitor something? There are types A through D or E, I forget.

MR. CONTE: What are the categories for them?

MR. NEWBERRY: The categories deal with the design pedigree or the nature of the qualification, Category One being the highest. Category One you'd have to met 5049. You'd have to be redundant. You'd have to be seismic. It would be -- the instrumentation would have to be off vital power, all those sorts of things.

So in terms of NRC review, our focus is always much more on the category than the type, except when you get to Type A. Type A is the one where that instrument would be used to trigger an operator action and that's viewed by the reg guide to be a plant-specific determination.

All Type A variables must be Category One so based on its use you determine the design requirement and that's Category One.

You asked the question if all Type A's are Category One and the answer is yes. If the instrument is

required to trigger a manual action by the operator, it must meet the highest design requirements which are Category One requirements.

MR. CONTE: Is that -- In light of what we're telling you here on the EOP, is that an inconsistency in the reg guide, the fact that -- Just because an EOP requires an action, does that mean it necessarily has to be a Type A, Category One? Are you aware of the NRC having a formal position on that?

MR. NEWBERRY: I think -- I'm not sure we've been real clear on -- I think if there is a disconnect or hold or lack of overlap, you've put your finger on it, between EOPs and Reg Guide 1.97.

Our effort has been towards the design, really, for this set of instruments, do you have them in the plant and they should be marked. 1.97, I believe, tells you that you need to make them known to the operator by some -- consistent with the design review methodology.

MR. CONTE: We didn't have a problem with that. We saw that the instrumentation was clearly marked. The operators knew.

MR. NEWBERRY: In terms of the other side, making a connection between the EOPs and 1.97, our effort really didn't get into that.

MR. CONTE: Is there a branch in NRR that would

have been responsible for making that connection?

We know that there are at least two branches responsible for looking at the EOPs -- human factors branch under DLPQ and I guess one of the reactor systems is the reactor systems branch or something that looks at the technical aspects of the EOPs.

Would that connection come in those two branches or would we have to ask them?

MR. NEWBERRY: Sure. I guess my reaction is sure, it should. The procedures folks I guess would be the human factors procedures people. The staff that did the procedures reviews themselves would have to give you that.

MR. CONTE: So you're basically saying that from an I&C branch point of view you're focusing mostly on the design, not what the parameter does or what triggers operator action.

MR. NEWBERRY: Right.

MR. CONTE: I think the key point that you said here is that it's very plant-specific and you really didn't question -- it probably varies, that this Type A variable, it's very plant-specific and you didn't question the determinations. You're kind of relying on the licensee to propose to the NRC this is a Type A variable.

MR. NEWBERRY: Right. Two more things come to mind.

MR. CONTE: Please, go ahead.

MR. NEWBERRY: At one time we thought about going back and really digging into why there might be differences, doing a rigorous review.

I think it was my judgment that that really might not buy us much because of what I saw and that we were requiring Category One, anyway. I mean you had this set of key functions, reactor water, vessel water levels, the pressure pool, the drive well, et cetera. You had the basic set that was Category One and that was judged to be sufficient.

If there were others that they decided to build on top of that were Type A's from their own procedures, well, fine. That was really the basis for not going back.

I think just one comment about why there might be some inconsistencies there. I touched on there being different interpretations of the definition of Type A and it has to do, I believe, with at what point do you stop taking failures to determine -- I think the term might be "contingency action."

Well, if you have an ATWS or a failure of the RAD protection system, you fail RCIC, HPCI, the operators don't have to do anything and the procedures would take them down to their paths like that.

Now would instrumentation used to take contingency

actions way down the path require manual action? Yeah, but is that really what the reg guide intended?

My sense is that different utilities go into the contingency area further than others.

Basically the plants are designed to shut down automatically and there should be no need for operator action within the near term.

I think some of the interpretations for Type A were narrow and you'll find some plans with virtually no Type A variables and some with -- let me guess -- 15 or 20.

MR. CONTE: Let me see if I can summarize. You're explaining the reason for the wide differences in Type A variables as determined by licensees.

One reason you just gave me, and I think it was the latter, was that it really was dependent on how much in depth the licensee went into contingencies and therefore determined what instrumentation was needed for what operator actions.

The first reason that you gave -- would you summarize that again? What was that?

MR. NEWBERRY: I think it was -- I forget now. It was really -- I think the first was really the different interpretations of the reg guide definition.

MR. CONTE: All right. Any more on Reg Guide 1.97?

MR. STONER: No. Is there any regulation that describes or discusses the difference in definition between systems or equipment that are referred to as important to safety versus Class 1-E?

MR. NEWBERRY: I couldn't point you to one directly. I don't recall. There are many definitions in the set of I-EEE standards, more than I can recall.

MR. CONTE: Let me ask a followup question on the regulations.

Is Reg Guide 1.97 a regulatory requirement by order or by QA plan? How did it come that Nine Mile 2 and all he plants have to implement 1.97?

MR. NEWBERRY: It was implemented via generic letter. The number that comes to mind is an AD-233, something like that. It was implemented by generic letter and plants committed to that generic letter so there are commitments on the docket to the reg guide.

MR. CONTE: And for Nine Mile situation since '82 was pre-licensing it got wrapped up in the FSAR and the plant's operating license SER for the NRC?

MR. NEWBERRY: I would expect that that's the case, yes. The only place that Reg Guide 1.97 is referenced in a regulation is 5049 in a footnote. It has to do with environmentally qualifications criteria in the reg guide for Cat One and Cat Two instrumentation.

MR. CONTE: Do you have any more there?

MR. STONER: Is I&C involved in providing input to EOPs to ensure that the instruments they operate or uses are the appropriate ones?

MR. CONTE: It is somewhat of a different twist to what I already asked but I think it's a fair way to --

Do you provide input to other branches with respect to these kinds of variables in their review for the EOPs?

MR. NEWBERRY: Do we provide input to the EOPs? A question may come up from time to time but there's no formal input provided.

I would just go back to the answer I gave on 1.97. The question will come up from time to time on an instrument or range of an instrument or something, but no.

MR. CONTE: When you say a question comes up, is that like in a staff meeting or is that a formal question where you guys have to handle from another division or another branch? Is it formal or informal?

MR. NEWBERRY: Well, all I can think of in just general experience would be informal. I'm trying to think of an example of a formal request on an individual case responded to by memo and I don't recall any.

MR. STONER: That is all I have.

MR. CONTE: All right. That's all you have.

MR. NEWBERRY: If you decide you wanted to get into 1.97 more based on looking at my responses, there is a gentleman in my branch that goes all the way back and is familiar with each generic letter.

MR. CONTE: What is his name?

MR. NEWBERRY: Joe Joyce, and there are workshops conducted in all the regions and the nature of the view is shared in those workshops all around the country and he has a much better recollection going back than I do.

MR. CONTE: By the way, what's your phone number where we could give you a call in case we need to get hold of you?

MR. NEWBERRY: 20821.

MR. CONTE: Let's talk about in general the scope of review of non I-E equipment, and I guess from your perspective instrumentation.

I guess you weren't directly involved in the licensing of unit two, but could you describe the process or the approach?

Let's say a plant were to get licensed at this point, how much in depth do you go in to the non I-E instrumentation look?

MR. NEWBERRY: Not very much at all. As I told Jim on his question on SPDS, our focus is on the safety systems and we would focus on adequate isolation at the

interface between 1-E and non 1-E systems, isolation between reactor protection and the plant computer, isolation between protection and the SPDS to make sure that there are isolation devices and they've been tested and met regulatory criteria.

MR. CONTE: Is it fair to say that having Reg Guide 1.97 as a guide and the categories one, two and three, going back to the reference that we made as important to safety, one being safety-related full pedigree, two being kind of a gray area instrumentation importance to safety, and three being the non 1-E.

Is that the way to characterize those categories of the reg guide?

MR. NEWBERRY: Good, but I would only say, too, though, that the reg guide does have specific criteria for the categories. You will find specific criteria for each of those categories in the reg guide rather than keeping it gray, like category two.

MR. CONTE: Would this Joe Joyce be knowledgeable of this specific review of Reg Guide 1.97 on unit two at Nine Mile?

MR. NEWBERRY: I don't know. I don't know. If you wanted to know who the reviewer was, I might be able to find out if you wanted to talk to the guy that did the actual review. I don't know who that was.

MR. CONTE: We'll call you if we need that.

MR. NEWBERRY: We've kept files. I mean I have a review file on all plants and that's what we did. I could look at it but as to who did the review, I do not know.

MR. CONTE: That might be best. You were going to provide us with the owners group position on this neutron flux instrumentation. Could you do that and provide us the file on Reg Guide 1.97 for Nine Mile 2? It may be very voluminous but it may be something that we would look at in preparation for another interview, to get a little more knowledgeable in terms of what would be done.

MR. NEWBERRY: Yeah, I had already listed Nine Mile 1.97 reviews and you said if it was separate to provide it, but I'll give you the whole file.

MR. STONER: Okay. Once again, two copies if you can.

MR. CONTE: In doing that review, how much depth do you go into the power supplies for instrumentation, or do you kind of just take the licensee's word for it based on their submittal that this is highly reliable, uninterruptable power supply, having so many sources or --

MR. NEWBERRY: That's a good question. The review approach that was used in those reg guides that was decided long ago was that we would accept the statement from the utility that they were going to provide vital power or

whatever was required by the reg guide. We accepted that on its face.

The area of focus was on requested deviations from the guide. It was only a guide so a utility would come in and they would say, well, maybe provide a table and meet the reg guide in the follow areas but I request deviations here, maybe on range or redundancy or on a basic instrument, maybe they would provide an instrument on a different function which would do the job, so we focused primarily on the deviations.

Like the neutron flux, that was a requested deviation.

MR. CONTE: So if a utility came in and said that rod position indication or any other stuff in the category two area, which it's my understanding is highly reliable supply not so much redundant safety, you really wouldn't question that.

If they came in and said that this is a category two or three and it's on an interruptible power supply --

MR. NEWBERRY: That's correct.

MR. CONTE: -- you really wouldn't get into those details as to what sources, potential for failure and all that stuff.

MR. NEWBERRY: No.

MR. CONTE: Okay. In light of what we told you

this morning, should rod position indication be on the 1-E uninterruptable power supplies?

MR. NEWBERRY: That's a good question. I'll give you one -- I'll say the operator needs to know that the plant's shut down. The operator needs to be able to confirm the plant is shut down.

I know when I listened to the initial briefing, when you talked from the phone on the site there in the events briefing on Wednesday or so, that that was one of my -- the most troubling points to me that the operators couldn't tell if the reactor was shut down.

Now whether that's rod position indication that's highly reliable, whether it's neutron flux instrumentation, maybe that could be assessed and be a combination of one or the other, and of course what is he trained to look at.

MR. CONTE: Well, let me clarify that. The impression I got talking to them and being involved with the two teams is I'd say they were like 75 percent sure the reactor was shut down based on the APRM indications and the fact that they knew they had electrical transient for sure.

They weren't quite sure what was happening in the reactor plant but they knew pressure had gone up and it had the symptoms of a load reject.

It's not that they were like zero -- totally confused. What was confusing is that the front panels were

telling them APRMs were a hundred percent, don't know what rod position is and the back panels were telling them -- Oh, and in the front panels the scram solenoid lights were telling them that the reactor protection system had functioned.

Hopefully that point was made in that briefing.

MR. NEWBERRY: It sure was.

MR. CONTE: And the scram logic lights were out, also indicating that a scram had occurred and the APRMs were at zero. I think the operators wanted to be a hundred percent --

MR. NEWBERRY: That's what the procedures tell them to look at.

MR. CONTE: I think the operators wanted to be a hundred percent sure and not have conflicting information. That's what the problem was. They had conflicting information.

MR. NEWBERRY: You're asking a good question about on the rod position indication and maybe they should --

MR. CONTE: The next question is did they, the reviewers, look at the consequences of a loss of UPS and I think you answered that, that you didn't really get that much into the details of the power supplies for all these instrumentations, you basically took the statements of the utility that this power supply was either safety grade or

highly reliable or whatever to fit the categories. Correct me if I'm wrong.

MR. NEWBERRY: That's correct.

MR. CONTE: And how about load distributions on these power supplies? Does that get the same answer? Maybe there may be another branch that looks at load distributions on --

MR. NEWBERRY: That would be electrical systems branch.

MR. CONTE: Electrical systems branch.

Are you all in one division -- I&C and electrical?

MR. NEWBERRY: Right.

MR. CONTE: What's that division called?

MR. NEWBERRY: Division of systems technology, DST.

MR. CONTE: That's the division --

MR. NEWBERRY: Ashok Thadani.

MR. CONTE: Jim?

MR. STONER: That's all I have.

MR. CONTE: Let's go off the record.

(Discussion off the record.)

MR. CONTE: Let's go back on the record.

We're back on the record. There was like a momentary break. Scott has something else to offer.

MR. NEWBERRY: I just -- We had a couple -- at

least one other activity that we had started on when this event occurred and that was as a result of the Millstone event a few weeks previous where they lost annunciators with the plant -- I think in the Millstone case they were a steady state but had lost annunciators and of course --

I remember when I first came to my job in 1988 there were three plants in a very near timeframe that lost all annunciators -- Calvert, Beaver and Rancho. They were all made by the manufacturer and they all had fires in their cabinets, overheated and burned up, so loss of annunciators has been a concern.

MR. CONTE: When you say fires in cabinets, these were power supply cabinets?

MR. NEWBERRY: Well, the annunciator -- yes, power. The cabinet supporting the annunciators in the control room.

MR. CONTE: Is that true for Millstone two, also? Do you remember what --

MR. NEWBERRY: Millstone two it was a power supply failure but I don't believe it was a fire.

MR. CONTE: Okay.

MR. NEWBERRY: There's a relationship here, I believe, in that you have a non 1-E system, annunciator system, in the control room and as we talked about it we've not required 1-E power or looked at annunciators that

closely at all, yet when they were lost, there seemed to be a pretty significant concern by the people who use the annunciators.

We're going back to take a look at that on Millstone from the standpoint of procedures, what procedures are in place at plants for loss of an annunciator situation and then of course we are also reviewing advanced reactor designs and we're taking a fresh look at this whole issue on the next generation of plants to see if we would want to make upgrades or create another category and get away from the 1-E, non 1-E, sort of thing. I thought I would mention that to you.

MR. CONTE: Do you have a concise record of all the loss annunciator events?

MR. NEWBERRY: No. We have recollections and we've put together some notes a couple of weeks ago. The best information I have is on the losses in 1988 because we issued an information notice after those events and we talked about the -- I can't remember if there was a suggestion or an acknowledgement that procedures would be useful in the loss of annunciator situation. I can get that for you, if you would like.

MR. CONTE: Could you at least identify what that information notice -- We have access to NUDOC so we should be able to get that information if you just help us identify

that number. You said these were '88 events. Chances are the information of this may have been issued late '88 or early '89.

MR. NEWBERRY: I believe I already went back and got that information after the Millstone event anyway so I'll be glad to put it with the other stuff.

MR. CONTE: Would you put it in the packet that you're going to give us? That would be great.

We are also going back to look at, from my BNW experience, the loss of NNI bulletin, 79 I think it was 27 or 29, and we're getting the information from the licensee in terms of how they addressed that from their plant. I don't know or I'm not going to predict what it says.

MR. NEWBERRY: That's a good idea.

MR. CONTE: I do remember the BMW plants were ordered to do training on that bulletin.

MR. NEWBERRY: We looked at that pretty closely, the ability to shut the plant down with the loss of any signal loss.

MR. CONTE: Is there any sources of information about annunciators and power supplies and non 1-E with respect to instrumentation that you would like to offer?

MR. NEWBERRY: No, that was it, just the last bit of information.

MR. CONTE: I appreciate you asking to go back on

the record with that information.

Let's go off the record.

(Whereupon the matter concluded at 8:56 a.m.)

REPORTER'S CERTIFICATE

This is to certify that the attached proceedings before the United States Nuclear Regulatory Commission

in the matter of:

NAME OF PROCEEDING: IIT Interview of Scott Newberry

DOCKET NUMBER:

PLACE OF PROCEEDING: Bethesda, Maryland

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

Marilynn Estep

Official Reporter
Ann Riley & Associates, Ltd.

07-455B-91

OFFICIAL TRANSCRIPT OF PROCEEDINGS

Agency: Nuclear Regulatory Commission
Incident Investigation Team

Title: Interview of Scott Newberry

Docket No.

LOCATION: Bethesda, Maryland

DATE: Friday, August 30, 1991 PAGES: 1 - 30

ANN RILEY & ASSOCIATES, LTD.
1612 K St. N.W, Suite 300
Washington, D.C. 20006
(202) 293-3950

Dupe of
9305070105

ERRATA SHEET

ADDENDUM

Page	Line	Correction and Reason for Correction
5	23	Change 1-I to 1-E (editorial)
7	23	Ginna is Ginna (editorial)
~~9~~	~~13~~	
13	12	5049 is 10CFR50.49 (editorial)
14	17/18	in some way consistent with the (clarity) Control room design review methodology
16	9	suppression pool, dry well pressure, etc.
16	21-24	this paragraph is not clear (clarity) and should probably be deleted. It doesn't add to my discussion and, as typed, is not clear
18	14	A0-233 should ~~be~~ be 83-22 (editorial)
29	19	signal loss should be single bus (editorial)

Date 9/20/91 Signature

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

INCIDENT INVESTIGATION TEAM

INTERVIEW OF)

)

SCOTT NEWBERRY)

)

Nuclear Regulatory Commission

The Woodmont Building

8120 Woodmont Avenue

Bethesda, Maryland

Friday, August 30, 1991

The above-entitled interview convened, pursuant to notice, in closed session at 8:10 a.m.

PARTICIPANTS:

RICHARD CONTE, NRC/IIT Team

JIM STONER, NRC/IIT Team

PROCEEDINGS

MR. CONTE: On the record. It's 8:10 on the 30th of August. We're at the Woodmont Building in Bethesda, Maryland. We're conducting interviews with NRC personnel for the Incident Investigation Team for the event at Nine Mile 2 on August 13th 1991.

My name is Richard Conte and I'm from Region I.

MR. STONER: My name is Jim Stoner and I am from Duke Power.

MR. NEWBERRY: My name is Scott Newberry. I'm chief of the instrumentation and controls systems branch in the office of NRR.

MR. CONTE: First of all, Scott, would you give a little bit of your background?

MR. NEWBERRY: Yes. I came to the NRC in late 1976 from the Navy. I first worked reactor systems branch in NRR. I of course worked Three Mile Island for several years.

I worked in other jobs, all in NRR, through the years in the areas of reliability and risk assessment, technical specifications, events assessment.

I started my current job in 1987 as chief of the instrumentation and control systems branch and I've been there since '87.

MR. CONTE: Thank you.

Why don't I let you run down the list of preplanned questions and that will get us started on some topics.

MR. STONER: When the NRC reviewed Nine Mile Point relative to 1.97, how did they come out in that inspection?

MR. NEWBERRY: Well, I can talk to the review a little bit. The review was conducted before I was in my job but I asked one of my engineers to go back and review the record.

I think basically Nine Mile Point 2's design in the review showed that they were in compliance with Reg Guide 1.97 to a very large extent. I think the only area I recollect where they were not, and that's the subject of continuing review, was the area of neutron flux monitoring.

I would expect that if you wanted to get documentation of that there would be no trouble in the safety evaluation reports at FSAR.

MR. CONTE: Let me clarify here. When the event happened, you say as the chief of the instrument control branch you had one of your engineers do a review as a result of this event?

MR. NEWBERRY: Yes. I was curious and I asked him to go back and pull the safety evaluation and the associated material on Nine Mile 2 Reg Guide 1.97 because I knew there was some concern on the post-accident monitoring

instrumentation.

MR. CONTE: What's the nature of the problem with the neutron flux monitoring?

MR. NEWBERRY: Let me go into a little bit of detail. When the reg guide was promulgated and issued for implementation back in the early '80s, I guess it was '82 or '83, it established criteria for key instrumentation and it was called Category One Criteria. Category One would mean you need to have redundant Class 1-E instrumentation.

At that time, there was no Class 1-E instrumentation available for monitoring neutron flux. No environmentally qualified system was sold or manufactured so I believe there were no boiling water reactors in this country that had fully environmentally qualified neutron flux instrumentation so it was carried -- I think we called it a developmental issue for further study.

Finally, when instrumentation was made available in the mid '80s, we proceeded -- I guess really in '87 and '88 perhaps -- I proceeded to require plants to implement this instrumentation and that became the subject of further review and appeal by all the BWR owners to the office of NRR.

MR. CONTE: Which range of neutron flux are we talking about -- source range?

MR. NEWBERRY: All ranges. The position of the

BWR licensees is that -- I believe -- there is plenty of documentation on this that we could get to back me up.

My recollection is that their position is that neutron flux instrumentation simply is not required for safety at these plants since it was never intended to perform a safety function,that the plants were designed to automatically shut down and insert the rods and if you knew that the rods were in there was no credible situation where you should have to worry about, return to critical and wouldn't need to monitor.

MR. STONER: What is the SICB position on this?

MR. NEWBERRY: I disagree. That's well documented. It's our view that it was important, that was the philosophy behind Reg Guide 1.97, that there are a set of safety functions that you should monitor in a reactor plant and neutron flux or reactivity control, which you are really worried about, is one of them and we took the position --

Actually what the owners did is they provided a topical report. The owners provided a topical report which documents their view as to why they didn't think their fully qualified neutron flux monitoring system was necessary -- when I say fully -- environmentally qualified Class 1-I power, et cetera.

We rejected that topical report, wrote a safety

evaluation and rejected that topical report and that was appealed to the director of NRR.

MR. CONTE: What were the results of the appeal?

MR. NEWBERRY: Dr. Murley decided basically in favor of the owners group. We're in the process of taking that decision and going through what we have to do on any generic change of position and formulate or prepare a letter back to the owners group and take it through the CRGR.

MR. CONTE: Has that letter gone out yet?

MR. NEWBERRY: No. It's on concurrence, as a matter of fact.

MR. CONTE: I think we will need that information, the topical report, the director's decision.

MR. NEWBERRY: We've got a whole notebook that we put together because of the long chronology on this that I will be glad to get for you.

MR. CONTE: I think the policy is whatever you provide us has to be in duplicate.

MR. NEWBERRY: That's no problem.

MR. CONTE: Let me summarize here. When Nine Mile Point 2 was getting licensed and a review was done of Reg Guide 1.97, this issue came up. I guess it was left as an outstanding issue for licensing. I guess it did not preclude startup because all the boilers were in kind of the same category.

MR. NEWBERRY: Right.

MR. CONTE: So an exception was made in the SER for the Reg Guide 1.97, is that correct?

MR. NEWBERRY: An exception -- I don't know if that's the right word but, yes, it was carried as basically a generic open item. I think the word that was used back then was a developing item. There was no qualified instrumentation available.

The problem, by the way, primarily was that when instrumentation is withdrawn after you start up and the drive motors that are inside the drive wall are not environmentally qualified nor are the connectors which transmit the information from the detectors up through and into the control room.

MR. CONTE: The other type vendors, pressurized water reactors, did they have the same problem? Did they take the NRC on on this issue?

MR. NEWBERRY: Only some of the older ones have since come in.

MR. CONTE: So the late model pressurized reactors have environmentally qualified neutron flux?

MR. NEWBERRY: I can't give you a good answer on that. I know that is a group -- Ganay and Beaver Valley come to mind -- where they've come in and argued that they don't need to go all the way in the Reg Guide 1.97 criteria

for neutron flux.

MR. CONTE: I have a general question about the licensing on Reg Guide --

If I'm repeating some of your questions, then stop me.

MR. STONER: Go ahead.

MR. CONTE: The pre-licensing on Nine Mile 2, I guess we call them NTOLs right after TMI two happened and they got put in a separate class.

Are you aware how the generic communications handled -- Reg Guide 1.97 came out with a revision I guess early '80s, Nine Mile 2 I guess was not required to respond at the time.

How was that handled from the point of view of -- Did you do separate SERs for all these TMI actions or Reg Guide 1.97 actions, or was that all incorporated in the FSAR and then it was just incorporated in the SER for the plant?

MR. NEWBERRY: Primarily the latter. Let me explain.

I was not involved in doing that but in going back on this issue and other issues to do research when something comes up I found that almost in every instance there was a submittal on the docket as part of the review.

That is, in the SER questions were asked and an evaluation is contained in the safety evaluation report that

was issued for licensing.

MR. CONTE: Let's continue down your lists.

MR. STONER: Does the NRC review the SPDS and other computer systems relative to the INC input power supplies?

MR. NEWBERRY: I'll try to answer your question as best I can. Most of the SPDS work was done before I came into my position so if you want to get into a detail, I think it would be best to get one of my staff that was involved, but SPDS -- I'm not sure.

Our role -- I can tell you what we did in the past and that was to ensure that the SPDS power, because it was non 1-E power, was adequately isolated from all the 1-E power so our role was primarily on the isolation capability and that's really about all I can tell you.

MR. CONTE: Was the SER -- I believe SPDS was one of the TMI action items.

MR. NEWBERRY: Right.

MR. CONTE: Was that incorporated in the operating license SER or was that SPDS after --

MR. NEWBERRY: For Nine Mile 2?

MR. CONTE: For Nine Mile 2.

MR. NEWBERRY: I don't know. I actually don't know.

MR. CONTE: Can you find that out for us and, if

there was a separate SER, provide us a copy of the SER for SPDS?

MR. NEWBERRY: Sure.

MR. CONTE: Jim, are there any more questions on Reg Guide 1.97 that you have there?

MR. STONER: Yes.

MR. CONTE: I'd like to have us keep to the one topics if we can.

MR. NEWBERRY: Did you want a copy of the 1.97 SER or any information on that? You asked me about the SPDS.

MR. CONTE: Yes, if it's separate but I got the impression that the SER for the Reg Guide 1.97 was incorporated into the operating license.

MR. NEWBERRY: I think so.

MR. CONTE: If it's separate, provide it. If it's not, then well get a copy of the SER for Nine Mile 2's operating license.

MR. NEWBERRY: All right.

MR. STONER: Is Nine Mile Point comparable to other BWRs with regard to the number of Type A variables?

MR. NEWBERRY: I don't know. I haven't made a comparison. I don't know.

I keep a matrix. I have a matrix of all plants in which variables are Type A's and I could provide that to you for every plant in the country. Would you like that?

MR. STONER: Yes.

MR. NEWBERRY: Can I talk to you a minute about Type A variables?

MR. CONTE: Go ahead. Please do.

MR. NEWBERRY: The NRCc position on Type A variables is that as stated in the reg guide it's a plant-specific determination that's made and we have not questioned it.

I can tell you that there are at some places significant differences in Type A variables from plant to plant, very significant differences, and it's my belief that that difference is based upon the interpretation of the criteria for a Type A variable found in the reg guide, those interpretations have varied. I'll be glad to provide you the matrix.

MR. CONTE: While we're talking about variables, the connection to the EOPs, one of the problems that we saw in the review of the event is there's a stop point in the EOPs before you cool down.

There's a caution to the operators to verify that all rods are in or at the 0-2 position or below or the reactor will remain shut down under all conditions.

The morning of the event, not having an analysis that the reactor will remain shut down and not knowing where the rods were because of the confusing instrumentation, it

put them in kind of a quandary, primarily because they were using RCIC for loss feed and condensate. They're not supposed to use the high pressure core spray because that's an injection into the top of the core and may cause power spikes.

They were in the ATWS procedure. In fact, the ATWS procedure --

MR. NEWBERRY: They were in the ATWS procedure?

MR. CONTE: They were in the ATWS procedure because they did not know what rod position was and they made the assumption that the rods were still out.

Then they had indication that APRM flux was at zero. They had indications on pressure and level that a transient had occurred in the reactor so the team is focusing on rod position which is not -- I don't know if it's Type A or Category One, but apparently it's the lower categories.

The question here for you is would your branch or who in the NRC would make that connection of the Reg Guide 1.97 and how it compares to the EOPs and what the operators need to use?

MR. STONER: Control rod position indication is not Type A.

MR. CONTE: Is Type A the same as Category One?

MR. NEWBERRY: It is confusing.

MR. CONTE: Yes.

MR. NEWBERRY: All Type A -- Let me back up there. Do you have a copy of the reg guide?

MR. CONTE: We are getting a copy.

MR. NEWBERRY: The types characterize what the instrument is used for. Is it used to verify that a function has been carried out? Is it used to monitor something? There are types A through D or E, I forget.

MR. CONTE: What are the categories for them?

MR. NEWBERRY: The categories deal with the design pedigree or the nature of the qualification, Category One being the highest. Category One you'd have to met 5049. You'd have to be redundant. You'd have to be seismic. It would be -- the instrumentation would have to be off vital power, all those sorts of things.

So in terms of NRC review, our focus is always much more on the category than the type, except when you get to Type A. Type A is the one where that instrument would be used to trigger an operator action and that's viewed by the reg guide to be a plant-specific determination.

All Type A variables must be Category One so based on its use you determine the design requirement and that's Category One.

You asked the question if all Type A's are Category One and the answer is yes. If the instrument is

required to trigger a manual action by the operator, it must meet the highest design requirements which are Category One requirements.

MR. CONTE: Is that -- In light of what we're telling you here on the EOP, is that an inconsistency in the reg guide, the fact that -- Just because an EOP requires an action, does that mean it necessarily has to be a Type A, Category One? Are you aware of the NRC having a formal position on that?

MR. NEWBERRY: I think -- I'm not sure we've been real clear on -- I think if there is a disconnect or hold or lack of overlap, you've put your finger on it, between EOPs and Reg Guide 1.97.

Our effort has been towards the design, really, for this set of instruments, do you have them in the plant and they should be marked. 1.97, I believe, tells you that you need to make them known to the operator by some -- consistent with the design review methodology.

MR. CONTE: We didn't have a problem with that. We saw that the instrumentation was clearly marked. The operators knew.

MR. NEWBERRY: In terms of the other side, making a connection between the EOPs and 1.97, our effort really didn't get into that.

MR. CONTE: Is there a branch in NRR that would

have been responsible for making that connection?

We know that there are at least two branches responsible for looking at the EOPs -- human factors branch under DLPQ and I guess one of the reactor systems is the reactor systems branch or something that looks at the technical aspects of the EOPs.

Would that connection come in those two branches or would we have to ask them?

MR. NEWBERRY: Sure. I guess my reaction is sure, it should. The procedures folks I guess would be the human factors procedures people. The staff that did the procedures reviews themselves would have to give you that.

MR. CONTE: So you're basically saying that from an I&C branch point of view you're focusing mostly on the design, not what the parameter does or what triggers operator action.

MR. NEWBERRY: Right.

MR. CONTE: I think the key point that you said here is that it's very plant-specific and you really didn't question -- it probably varies, that this Type A variable, it's very plant-specific and you didn't question the determinations. You're kind of relying on the licensee to propose to the NRC this is a Type A variable.

MR. NEWBERRY: Right. Two more things come to mind.

MR. CONTE: Please, go ahead.

MR. NEWBERRY: At one time we thought about going back and really digging into why there might be differences, doing a rigorous review.

I think it was my judgment that that really might not buy us much because of what I saw and that we were requiring Category One, anyway. I mean you had this set of key functions, reactor water, vessel water levels, the pressure pool, the drive well, et cetera. You had the basic set that was Category One and that was judged to be sufficient.

If there were others that they decided to build on top of that were Type A's from their own procedures, well, fine. That was really the basis for not going back.

I think just one comment about why there might be some inconsistencies there. I touched on there being different interpretations of the definition of Type A and it has to do, I believe, with at what point do you stop taking failures to determine -- I think the term might be "contingency action."

Well, if you have an ATWS or a failure of the RAD protection system, you fail RCIC, HPCI, the operators don't have to do anything and the procedures would take them down to their paths like that.

Now would instrumentation used to take contingency

actions way down the path require manual action? Yeah, but is that really what the reg guide intended?

My sense is that different utilities go into the contingency area further than others.

Basically the plants are designed to shut down automatically and there should be no need for operator action within the near term.

I think some of the interpretations for Type A were narrow and you'll find some plans with virtually no Type A variables and some with -- let me guess -- 15 or 20.

MR. CONTE: Let me see if I can summarize. You're explaining the reason for the wide differences in Type A variables as determined by licensees.

One reason you just gave me, and I think it was the latter, was that it really was dependent on how much in depth the licensee went into contingencies and therefore determined what instrumentation was needed for what operator actions.

The first reason that you gave -- would you summarize that again? What was that?

MR. NEWBERRY: I think it was -- I forget now. It was really -- I think the first was really the different interpretations of the reg guide definition.

MR. CONTE: All right. Any more on Reg Guide 1.97?

MR. STONER: No. Is there any regulation that describes or discusses the difference in definition between systems or equipment that are referred to as important to safety versus Class 1-E?

MR. NEWBERRY: I couldn't point you to one directly. I don't recall. There are many definitions in the set of I-EEE standards, more than I can recall.

MR. CONTE: Let me ask a followup question on the regulations.

Is Reg Guide 1.97 a regulatory requirement by order or by QA plan? How did it come that Nine Mile 2 and all he plants have to implement 1.97?

MR. NEWBERRY: It was implemented via generic letter. The number that comes to mind is an AD-233, something like that. It was implemented by generic letter and plants committed to that generic letter so there are commitments on the docket to the reg guide.

MR. CONTE: And for Nine Mile situation since '82 was pre-licensing it got wrapped up in the FSAR and the plant's operating license SER for the NRC?

MR. NEWBERRY: I would expect that that's the case, yes. The only place that Reg Guide 1.97 is referenced in a regulation is 5049 in a footnote. It has to do with environmentally qualifications criteria in the reg guide for Cat One and Cat Two instrumentation.

MR. CONTE: Do you have any more there?

MR. STONER: Is I&C involved in providing input to EOPs to ensure that the instruments they operate or uses are the appropriate ones?

MR. CONTE: It is somewhat of a different twist to what I already asked but I think it's a fair way to --

Do you provide input to other branches with respect to these kinds of variables in their review for the EOPs?

MR. NEWBERRY: Do we provide input to the EOPs? A question may come up from time to time but there's no formal input provided.

I would just go back to the answer I gave on 1.97. The question will come up from time to time on an instrument or range of an instrument or something, but no.

MR. CONTE: When you say a question comes up, is that like in a staff meeting or is that a formal question where you guys have to handle from another division or another branch? Is it formal or informal?

MR. NEWBERRY: Well, all I can think of in just general experience would be informal. I'm trying to think of an example of a formal request on an individual case responded to by memo and I don't recall any.

MR. STONER: That is all I have.

MR. CONTE: All right. That's all you have.

MR. NEWBERRY: If you decide you wanted to get into 1.97 more based on looking at my responses, there is a gentleman in my branch that goes all the way back and is familiar with each generic letter.

MR. CONTE: What is his name?

MR. NEWBERRY: Joe Joyce, and there are workshops conducted in all the regions and the nature of the view is shared in those workshops all around the country and he has a much better recollection going back than I do.

MR. CONTE: By the way, what's your phone number where we could give you a call in case we need to get hold of you?

MR. NEWBERRY: 20821.

MR. CONTE: Let's talk about in general the scope of review of non I-E equipment, and I guess from your perspective instrumentation.

I guess you weren't directly involved in the licensing of unit two, but could you describe the process or the approach?

Let's say a plant were to get licensed at this point, how much in depth do you go in to the non I-E instrumentation look?

MR. NEWBERRY: Not very much at all. As I told Jim on his question on SPDS, our focus is on the safety systems and we would focus on adequate isolation at the

interface between 1-E and non 1-E systems, isolation between reactor protection and the plant computer, isolation between protection and the SPDS to make sure that there are isolation devices and they've been tested and met regulatory criteria.

MR. CONTE: Is it fair to say that having Reg Guide 1.97 as a guide and the categories one, two and three, going back to the reference that we made as important to safety, one being safety-related full pedigree, two being kind of a gray area instrumentation importance to safety, and three being the non 1-E.

Is that the way to characterize those categories of the reg guide?

MR. NEWBERRY: Good, but I would only say, too, though, that the reg guide does have specific criteria for the categories. You will find specific criteria for each of those categories in the reg guide rather than keeping it gray, like category two.

MR. CONTE: Would this Joe Joyce be knowledgeable of this specific review of Reg Guide 1.97 on unit two at Nine Mile?

MR. NEWBERRY: I don't know. I don't know. If you wanted to know who the reviewer was, I might be able to find out if you wanted to talk to the guy that did the actual review. I don't know who that was.

MR. CONTE: We'll call you if we need that.

MR. NEWBERRY: We've kept files. I mean I have a review file on all plants and that's what we did. I could look at it but as to who did the review, I do not know.

MR. CONTE: That might be best. You were going to provide us with the owners group position on this neutron flux instrumentation. Could you do that and provide us the file on Reg Guide 1.97 for Nine Mile 2? It may be very voluminous but it may be something that we would look at in preparation for another interview, to get a little more knowledgeable in terms of what would be done.

MR. NEWBERRY: Yeah, I had already listed Nine Mile 1.97 reviews and you said if it was separate to provide it, but I'll give you the whole file.

MR. STONER: Okay. Once again, two copies if you can.

MR. CONTE: In doing that review, how much depth do you go into the power supplies for instrumentation, or do you kind of just take the licensee's word for it based on their submittal that this is highly reliable, uninterruptable power supply, having so many sources or --.

MR. NEWBERRY: That's a good question. The review approach that was used in those reg guides that was decided long ago was that we would accept the statement from the utility that they were going to provide vital power or

whatever was required by the reg guide. We accepted that on its face.

The area of focus was on requested deviations from the guide. It was only a guide so a utility would come in and they would say, well, maybe provide a table and meet the reg guide in the follow areas but I request deviations here, maybe on range or redundancy or on a basic instrument, maybe they would provide an instrument on a different function which would do the job, so we focused primarily on the deviations.

Like the neutron flux, that was a requested deviation.

MR. CONTE: So if a utility came in and said that rod position indication or any other stuff in the category two area, which it's my understanding is highly reliable supply not so much redundant safety, you really wouldn't question that.

If they came in and said that this is a category two or three and it's on an interruptible power supply --

MR. NEWBERRY: That's correct.

MR. CONTE: -- you really wouldn't get into those details as to what sources, potential for failure and all that stuff.

MR. NEWBERRY: No.

MR. CONTE: Okay. In light of what we told you

this morning, should rod position indication be on the 1-E uninterruptable power supplies?

MR. NEWBERRY: That's a good question. I'll give you one -- I'll say the operator needs to know that the plant's shut down. The operator needs to be able to confirm the plant is shut down.

I know when I listened to the initial briefing, when you talked from the phone on the site there in the events briefing on Wednesday or so, that that was one of my -- the most troubling points to me that the operators couldn't tell if the reactor was shut down.

Now whether that's rod position indication that's highly reliable, whether it's neutron flux instrumentation, maybe that could be assessed and be a combination of one or the other, and of course what is he trained to look at.

MR. CONTE: Well, let me clarify that. The impression I got talking to them and being involved with the two teams is I'd say they were like 75 percent sure the reactor was shut down based on the APRM indications and the fact that they knew they had electrical transient for sure.

They weren't quite sure what was happening in the reactor plant but they knew pressure had gone up and it had the symptoms of a load reject.

It's not that they were like zero -- totally confused. What was confusing is that the front panels were

telling them APRMs were a hundred percent, don't know what rod position is and the back panels were telling them -- Oh, and in the front panels the scram solenoid lights were telling them that the reactor protection system had functioned.

Hopefully that point was made in that briefing.

MR. NEWBERRY: It sure was.

MR. CONTE: And the scram logic lights were out, also indicating that a scram had occurred and the APRMs were at zero. I think the operators wanted to be a hundred percent --

MR. NEWBERRY: That's what the procedures tell them to look at.

MR. CONTE: I think the operators wanted to be a hundred percent sure and not have conflicting information. That's what the problem was. They had conflicting information.

MR. NEWBERRY: You're asking a good question about on the rod position indication and maybe they should --

MR. CONTE: The next question is did they, the reviewers, look at the consequences of a loss of UPS and I think you answered that, that you didn't really get that much into the details of the power supplies for all these instrumentations, you basically took the statements of the utility that this power supply was either safety grade or

highly reliable or whatever to fit the categories. Correct me if I'm wrong.

MR. NEWBERRY: That's correct.

MR. CONTE: And how about load distributions on these power supplies? Does that get the same answer? Maybe there may be another branch that looks at load distributions on --

MR. NEWBERRY: That would be electrical systems branch.

MR. CONTE: Electrical systems branch.

Are you all in one division -- I&C and electrical?

MR. NEWBERRY: Right.

MR. CONTE: What's that division called?

MR. NEWBERRY: Division of systems technology, DST.

MR. CONTE: That's the division --

MR. NEWBERRY: Ashok Thadani.

MR. CONTE: Jim?

MR. STONER: That's all I have.

MR. CONTE: Let's go off the record.

(Discussion off the record.)

MR. CONTE: Let's go back on the record.

We're back on the record. There was like a momentary break. Scott has something else to offer.

MR. NEWBERRY: I just -- We had a couple -- at

least one other activity that we had started on when this event occurred and that was as a result of the Millstone event a few weeks previous where they lost annunciators with the plant -- I think in the Millstone case they were a steady state but had lost annunciators and of course --

I remember when I first came to my job in 1988 there were three plants in a very near timeframe that lost all annunciators -- Calvert, Beaver and Rancho. They were all made by the manufacturer and they all had fires in their cabinets, overheated and burned up, so loss of annunciators has been a concern.

MR. CONTE: When you say fires in cabinets, these were power supply cabinets?

MR. NEWBERRY: Well, the annunciator -- yes, power. The cabinet supporting the annunciators in the control room.

MR. CONTE: Is that true for Millstone two, also? Do you remember what --

MR. NEWBERRY: Millstone two it was a power supply failure but I don't believe it was a fire.

MR. CONTE: Okay.

MR. NEWBERRY: There's a relationship here, I believe, in that you have a non 1-E system, annunciator system, in the control room and as we talked about it we've not required 1-E power or looked at annunciators that

closely at all, yet when they were lost, there seemed to be a pretty significant concern by the people who use the annunciators.

We're going back to take a look at that on Millstone from the standpoint of procedures, what procedures are in place at plants for loss of an annunciator situation and then of course we are also reviewing advanced reactor designs and we're taking a fresh look at this whole issue on the next generation of plants to see if we would want to make upgrades or create another category and get away from the 1-E, non 1-E, sort of thing. I thought I would mention that to you.

MR. CONTE:. Do you have a concise record of all the loss annunciator events?

MR. NEWBERRY: No. We have recollections and we've put together some notes a couple of weeks ago. The best information I have is on the losses in 1988 because we issued an information notice after those events and we talked about the -- I can't remember if there was a suggestion or an acknowledgement that procedures would be useful in the loss of annunciator situation. I can get that for you, if you would like.

MR. CONTE: Could you at least identify what that information notice -- We have access to NUDOC so we should be able to get that information if you just help us identify

that number. You said these were '88 events. Chances are the information of this may have been issued late '88 or early '89.

MR. NEWBERRY: I believe I already went back and got that information after the Millstone event anyway so I'll be glad to put it with the other stuff.

MR. CONTE: Would you put it in the packet that you're going to give us? That would be great.

We are also going back to look at, from my BNW experience, the loss of NNI bulletin, 79 I think it was 27 or 29, and we're getting the information from the licensee in terms of how they addressed that from their plant. I don't know or I'm not going to predict what it says.

MR. NEWBERRY: That's a good idea.

MR. CONTE: I do remember the BMW plants were ordered to do training on that bulletin.

MR. NEWBERRY: We looked at that pretty closely, the ability to shut the plant down with the loss of any signal loss.

MR. CONTE: Is there any sources of information about annunciators and power supplies and non 1-E with respect to instrumentation that you would like to offer?

MR. NEWBERRY: No, that was it, just the last bit of information.

MR. CONTE: I appreciate you asking to go back on

the record with that information.

Let's go off the record.

(Whereupon the matter concluded at 8:56 a.m.)

REPORTER'S CERTIFICATE

This is to certify that the attached proceedings before the United States Nuclear Regulatory Commission

in the matter of:

NAME OF PROCEEDING: IIT Interview of Scott Newberry

DOCKET NUMBER:

PLACE OF PROCEEDING: Bethesda, Maryland

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

Marilynn Estep

Official Reporter
Ann Riley & Associates, Ltd.