ORIGINAL

07-104A-91

OFFICIAL TRANSCRIPT OF PROCEEDINGS

Agency: Nuclear Regulatory Commission
Incident Investigation Team

Title: Nine Mile Point Nuclear Power Plant
Interview of: DAVID BROCKWELL

Docket No.

LOCATION: Scriba, New York

DATE: Wednesday, August 21, 1991

PAGES: 1 - 24

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

Exhibit 3-1 (continued)

ADDENDUM TO INTERVIEW OF David Brockwell / NAOC
(Name/Position)

Page	Line	Correction and Reason for Correction
3	15	more or less what you start at
3	20	(why) if
6	1	floor to the control rm.
12	13	(PA-139) PI-139
13	17	(upso --) up so easy
13	22	(--) no problems
16	23	(--) Rx theory, and systems

Page 1 of 1 Signature [signature] Date 8/23/91

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

INCIDENT INVESTIGATION TEAM

- - - - - - - - - - - - - - - - - - - -

Interview of :

DAVID BROCKWELL :

(Closed) :

- - - - - - - - - - - - - - - - - - - -

Conference Room B
Administration Building
Nine Mile Point Nuclear
Power Plant, Unit Two
Lake Road
Scriba, New York 13093
Wednesday, August 21, 1991

The interview commenced, pursuant to notice, at 11:14 a.m.

PRESENT FOR THE IIT:

Michael Jordan, NRC

Rich Conte, NRC

P R O C E E D I N G S

[11:14 a.m.]

MR. JORDAN: It's August 21st, 1991, it's about ten minutes after 11. We are at the Nine Mile Point Unit Two in the P Building, we're conducting interviews concerning a transient that occurred on August the 13th, 1991.

My name is Michael Jordan, I'm with U.S. NRC out of Region III.

MR. CONTE: I'm Rich Conte, NRC Region I.

MR. BROCKWELL: I'm David Brockwell and I'm at Plant Unit Two. I'm a nuclear auxiliary operator C.

MR. JORDAN: Okay, David, why don't you just give us a background on your experience, as far as your nuclear experience and your previous experience?

MR. BROCKWELL: In '86 I got out of college from Allegheny with a degree in math and economics. I was hired on here in September '86 as a utility mechanic for the security department, more or less a janitor. Then I went into the buildings and grounds department the following year, in the fall of '87, and I was bumped out there through our union bumping process and ended up in the plant. Then in May '89 I came into operations; that was a big change for me, going from pulling garbage to learning something. I've been in the department since then; moved up

from an AOB to NAOC.

MR. JORDAN: Can you give us what they mean?

MR. BROCKWELL: Aux operator B to a nuclear auxiliary operator C.

MR. JORDAN: Okay.

MR. BROCKWELL: To the time in training from the department.

MR. CONTE: What's the typical progression here? It's an aux operator A, B --

MR. BROCKWELL: There's no A --

MR. CONTE: Oh.

MR. BROCKWELL: -- aux operator.

MR. CONTE: It's just an aux operator?

MR. BROCKWELL: It starts out right at a B operator which is more or -- that's what you process as getting into the department and an interview.

MR. CONTE: Okay. And then nuclear auxiliary operator C?

MR. BROCKWELL: Yes. That's the next step. I don't know why there's a nuclear aux operator B, but it's just --

MR. CONTE: And then what, D?

MR. BROCKWELL: No, then the next step is an E operator which is our licensed operator.

MR. CONTE: Licensed operators, okay. Thank you.

MR. JORDAN: You're currently non-licensed?

MR. BROCKWELL: Yes.

MR. JORDAN: Okay. David, why don't -- is there anything else as far as your experience goes?

MR. BROCKWELL: No, not really.

MR. JORDAN: Okay. Why don't you, in your own words tell us -- are you on day-shift? What shift are you on?

MR. BROCKWELL: This week I'm on -- I'm on day shift this week. I'll be going on to nights next week.

MR. JORDAN: The event, which shift were you on?

MR. BROCKWELL: I was on days. We were the shift -- we would have been the shift of record coming in on days. So we were expecting to take the turnover at 6 a.m.

MR. JORDAN: Okay. Why don't you just walk through when you came to the gate that morning?

MR. BROCKWELL: Came through the gate that morning, probably just before 6:00. It looked like there wasn't a lot of steam coming out of the cooling tower, but you can never tell, depending on the whether conditions; walking into the yard -- walking towards the locker room I run into a mechanic and he said "The sticks were up in the yard." So that kind of cleared my mind that we must have taken a scram or some kind of transient.

MR. JORDAN: What does sticks up in the yard mean?

MR. BROCKWELL: The output breakers -- output stabs, if you want to call them -- from the transformers were open. So we had no power going out, so something was going on. So from there I proceeded just to grab my boots and keys and hardhat and straight up to the control room which is probably just before 5:00 -- just before 6:00, excuse me, where I had noted that all the panels were kind of dark. And from there it was just waiting instructions, letting them know I was here, and awaiting instructions on where they needed me. Just after --

MR. CONTE: What did you -- before you got to the control room, did you see any lighting problems on the way up?

MR. BROCKWELL: Yes. On my way up I noticed there was -- I caught a couple operators going up the elevator and it was dark -- with flashlight in hand.

MR. CONTE: The elevator in the aux service building --

MR. BROCKWELL: There was no light -- lighting in the elevator in the aux service building.

MR. CONTE: No light except for that we understand that the floor lights were on?

MR. BROCKWELL: Yes. The floor lights were lit. And that was the only lighting in there.

MR. JORDAN: Is that how you got from the ground

floor to --

MR. BROCKWELL: Yes.

MR. CONTE: Where exactly is this locker room? Is it in the control building or is it in the aux service building?

MR. BROCKWELL: I guess it would be considered aux service building. It's just across from our cardox tanks. Just as you walk in the plant there.

MR. CONTE: 261 elevation?

MR. BROCKWELL: Right. Right when you walk in.

MR. CONTE: Okay.

MR. BROCKWELL: From the aux -- aux service building -- auxiliary service building.

MR. CONTE: Okay. So you got to the control room you reported in that you're here?

MR. BROCKWELL: Yes.

MR. CONTE: Were you in the Beehive or in the control room?

MR. BROCKWELL: No, right in the control room.

MR. CONTE: Okay. Why did you go to the control room instead of the Beehive?

MR. BROCKWELL: Because they're not going to call it -- just continually call people over there; at that point it's easiest just to go straight in and stay in the back just so that -- or at least out of the way of everything.

All the commotion so they can see, right off the bat, who they have who they can send and where to go.

MR. CONTE: Did you know a site emergency had been declared?

MR. BROCKWELL: No. Not at that point because there was no -- we didn't any -- I found out at that point that we had no gaitronic systems, we had power for calling you, but I found that on the way up the elevator, people were telling me that UPS's were down.

MR. CONTE: Okay. All right. So what was the first assignment when you were waiting?

MR. BROCKWELL: A little bit after six, probably five after or so. My CSO, which would be David Rathbun, asked me to verify that the scram air discharge -- the scram air header was discharged. So our biggest problem was finding local indications -- we went right to the prints, looking just downstream of our ARI valves to find a gauge that would show me exactly that it didn't rely on any kind of power or anything, just an air pressure gauge itself. That the air header was bled off.

MR. CONTE: Okay.

MR. BROCKWELL: So after a little bit of discussion I Xeroxed a copy and went out and found it -- a little discussion between people of where it possibly could be because nobody was exactly sure.

MR. CONTE: Okay. Do you remember the pressure gauge number?

MR. BROCKWELL: In fact, I just looked at it. PI-139. I don't remember the prefix, probably RDS or --

MR. CONTE: RDS, rod drive system?

MR. BROCKWELL: Yeah.

MR. CONTE: Okay. Okay, could you tell us your path from the control room down to this valve and what did you observe from the point of view of lighting? Any problems?

MR. BROCKWELL: Um, I took the quickest way down, I took the stairs next to the elevator; it's easier than waiting for the elevator. I can fly down the stairs quicker.

MR. CONTE: This was that same elevator in the aux service building?

MR. BROCKWELL: Yes, in the aux service building, so I took the aux service building stairs.

MR. CONTE: How was the stairwell there? That had lights?

MR. BROCKWELL: Um, I don't remember off hand. It was not something I was concerned with. Just hold on to the railings and get down. From there over to the reactor building air lock to get into the reactor building on 261 all the way around, got into the reactor building, just

walking through, you just peak around to see if anything was out of the ordinary, but all the way around on the north side --

MR. JORDAN: No lighting problems?

MR. BROCKWELL: No. Not that I noticed.

MR. JORDAN: Okay.

MR. CONTE: Help me a little here. When you're looking at the reactor building from the security -- from the Unit Two security building you see a -- a large -- it looks like a stack, I understand that's a stairway going up the building --

MR. BROCKWELL: Yes.

MR. CONTE: -- that kind of protrudes out?

MR. BROCKWELL: Right.

MR. CONTE: The air lock -- some people have mentioned coming down that stairway, exiting and coming out into the yard, going by the trailers --

MR. BROCKWELL: Right.

MR. CONTE: -- and then going back into cardox room. Is that the path you used, or is this a different path to get into the reactor building?

MR. BROCKWELL: Oh. Okay. There's two entrances to the reactor building that we mainly use, which one through the trailer access which -- I've got to think, I loose my bearing when I'm in a round building. The trailer

is probably a southwest entrance or a west entrance they're calling it, I think, and I think the other airlock is considered an east entrance or a southeast entrance.

MR. CONTE: You used the east entrance?

MR. BROCKWELL: Yes.

MR. CONTE: Okay.

MR. BROCKWELL: So I had to pass, more or less, inside pass by that other stairway; go all the way around past the northside of the reactor track bay around past that all the way over into the rod flow control area or filter area over in that area was where the gauge was found.

MR. CONTE: Do you have to suit up to get into the reactor building?

MR. BROCKWELL: No.

MR. CONTE: Okay. So you enter into the building and you're looking around and you didn't see anything unusual?

MR. BROCKWELL: Not at that point, no. I was mainly concerned on getting over and finding this pressure indicator and I wasn't sure exactly where it was so I knew where the ARI valves I was looking for was and I had a little Xerox of the print, so mainly it was tracing it back -- just tracing lines back to the gauge, which was real close by so it didn't take me too long.

MR. CONTE: Did you find it?

MR. BROCKWELL: As soon as I found it I verified that it was zero, called the control room back and I think it was exactly at the point where they re-energize their power.

MR. JORDAN: How did you call the control room?

MR. BROCKWELL: With the land line, if you want to call it or dial telephone.

MR. JORDAN: There's one close by?

MR. BROCKWELL: Dial telephone close by.

MR. JORDAN: Now you know, loss of power came back when you were in your --

MR. BROCKWELL: When I called the control room, they said they had it back and so they -- my information was -- it was helpful, but they already had it, apparently on indication from the control room.

MR. JORDAN: Verification that this gauge read zero, that it was -- the discharge header, how did you do that?

MR. BROCKWELL: What do you mean by that?

MR. JORDAN: Did you check by the print -- by the gauge number versus the gauge, or did you walk the air header back --

MR. BROCKWELL: I walked both ways. In order to find the gauge, I had to walk the air header back.

MR. JORDAN: So it was tagged with --

MR. BROCKWELL: And plus it was tagged with the instrument number.

MR. CONTE: 139?

MR. BROCKWELL: Right. Because just beside that I think there's a pressure transmitter so I can verify the PT-139 versus the PI-139. It comes off of the same -- right at the same point. There's a transmitter and a local indicator.

MR. JORDAN: So there wasn't any overhead that was actually low enough that you could see it. Then you called the control room and told them that it was --

MR. BROCKWELL: I told them that the air header PA-139 -- I tried telling the exact person that sent me out so he could refer it, to make it as short as possible what I was saying.

MR. JORDAN: And it was zero, did you say?

MR. BROCKWELL: Yes, that the air header was zero.

From there, I just proceeded back up to the control room, to await further instructions.

MR. JORDAN: And your transition back to the control room -- did you go back the same way? Of course power is back now, so I guess there was no problem with lighting or anything else that you saw.

MR. BROCKWELL: No. I don't even know at that point which way I went back.

MR. JORDAN: Okay.

But as far as going to and from -- in and out of the plant, lighting, as far as you know, was not a problem.

MR. BROCKWELL: I didn't notice anything at that point.

MR. JORDAN: You're back in the control room.

MR. BROCKWELL: I just sat around a little bit, until they sent me a couple minutes later -- they asked myself and one other person, Jim Stevens, to respond to the aux boilers and get them started up, so we could start supplying steam.

MR. CONTE: I was in an interview with, I think, Jim Stevens. I think he mentioned that -- he's an NAOC.

MR. BROCKWELL: Yes.

MR. CONTE: Was he involved with the aux boilers, too? He gave me the impression the aux boilers came up real smooth. He said he never saw aux boilers come up so --

MR. BROCKWELL: No. I've never got an aux -- Between the two of us, we were really surprised, because normally it takes at least two people to get a boiler fired up quick and get it going, and it was super-easy. It was the first time we had -- that's only the Bravo boiler.

MR. CONTE: There are two, A and B?

MR. BROCKWELL: There are two boilers, A and B. Our Alpha one was in nitrogen layup, so it took us a little

while.

MR. CONTE: How would you describe the effort, between you and Jim? You were helping one another? Who was really responsible for getting the boiler up all by himself, or what?

MR. BROCKWELL: I don't think either of us took total responsibility or the other, because it depended on where we were at. We both knew exactly what had to be done, so I think he took the first effort of firing the boiler up, and I was supporting him at that point, doing miscellaneous things in the startup of it.

MR. CONTE: Was either one of you using a procedure?

MR. BROCKWELL: Yes. The procedure is right there, and through a lot of times firing them up, just background stuff -- along with the procedure, you can think of little things to check.

MR. CONTE: Based on your experience.

MR. BROCKWELL: Based on experience. A lot of it down there is, you check things through experience that aren't in the procedure, but we didn't have any problems, which was something very different down there, for the first time.

MR. CONTE: Do you have anything else, Mike?

MR. JORDAN: No, I don't have anything else.

MR. CONTE: I do have another question. I'm trying to formulate it in my mind. You mentioned the aspect that there are a lot of things you do based on your experience. Wouldn't it be nice to get that into the procedure for the new guy or the next guy to --

MR. BROCKWELL: I know what you're saying, experience-related things in the procedure, maybe precautions. I don't think a lot of it can be, because it comes with just a feel, some of it. Some things -- well --

MR. CONTE: Just an innate skill?

MR. BROCKWELL: Yes.

MR. CONTE: A skill within you.

MR. JORDAN: What about training? You took over as an operator in '89, and you went out there to start the boilers for the first time. Is there a training process that says, Okay, fine, we're going to sit you down in a classroom and teach you how to start and operate this thing and then take you out and show you how to operate it and then let you operate it?

MR. BROCKWELL: The way it's set up now, yes. They pretty much go to training first. Or I spent a lot of time on shift before I went to the formal training -- in other words all the system. I spent a lot of time on shift, tagging along with people. I found shift time like that to be more helpful. Just hands-on you can learn, I feel, a lot

more than you can out of a book.

MR. JORDAN: Okay.

MR. BROCKWELL: The book explains how it works, but to actually work it you need the time in the systems. This past year, I purposely didn't put my name in for license class because I felt I wanted another year in the plant. I feel you can learn more in the plant, hands-on, than you can right out of a book. I feel it's a lot more helpful.

MR. JORDAN: Is there a continuous training program, as far as you know?

MR. BROCKWELL: Yes, there is. Our non-licensed --

MR. JORDAN: Besides the operating licensing area, how about yourself, in the non-licensed area? If you stayed in the non-licensed are, is there a continuous training program that you keep going back to, to make sure that you keep trained on the areas that you have responsibility on?

MR. BROCKWELL: Yes. It seems like every cycle, the way we rotate our six-week cycle right now, when you go into training, right now they're prepping us a little bit for reactor theory. One day, probably two days, out of each five-day training cycle, we're learning -- they're trying to prepare for license class, also, to give you a basic knowledge, so you're familiar with the terminologies used,

so you don't want into a theory course and have no idea what they're talking about at all.

But we also do system training. A lot of it is review -- you've had it before -- but sometimes you'll catch something different. Each time they might go a little bit deeper.

MR. JORDAN: Is there a test or an evaluation that goes along with that?

MR. BROCKWELL: There's a test every cycle on whatever you were trained on.

MR. JORDAN: Written test, or performance test?

MR. BROCKWELL: Written test.

MR. JORDAN: You rotate with the shift in the training?

MR. BROCKWELL: Yes.

MR. CONTE: Can you give us an example -- you said that you check things that are not really in a procedure, and to a certain extent you can't put everything in a procedure. I think I understand that, but could you give us an example of one of those things, when you were starting the aux boiler?

MR. BROCKWELL: Oh, on this one?

MR. CONTE: Is there some unique control aspect of some point -- getting the fuel into the --

MR. BROCKWELL: No, the boiler -- One aspect

would be starting it up, for the conductivity of the boiler itself. They give you a range, probably starting out at maybe 900 or 1,000 micromoles, once you get the thing fully operating and supplying everything you need at 1800 micromoles, but where along the line you need it tells you, but if you started a boiler at that much, at a high level of conductivity, you would have problems controlling it right in the beginning, because it would heat up too quick; you'd pressurize it took quick and probably lose it on high pressure a lot. I guess at that point it's a feel on where the conductivity level is a good place to start it and how far you're opening your valves at once.

Once you get the boiler pressurized, it says to slowly pressurize the header going out to -- in this case they're reboilers, the first thing we were supplying. We don't want to just wing that valve open; it's slowly opening it while one person's watching pressure down below, so we don't lose the boiler to trip due to low level, supplying all your steam at once, just giving it an outlet and just letting it go.

MR. CONTE: Isn't there a precaution in the procedure that tells you about slowly opening that valve?

MR. BROCKWELL: Yes. It's slowly opening up to pressurize it, but I guess at that point how slow is slow?

MR. CONTE: Yes. Some people could be very heavy-

handed.

MR. BROCKWELL: Right. It's just a feel, between the person at the boilers recognizing, whoa, slow down.

MR. CONTE: I've got a better feel for what you're talking about now, now that you say that.

MR. BROCKWELL: Right.

MR. CONTE: How do you control this conductivity, for example? You say you'd rather start out at the low end. How do you control the conductivity of the water?

MR. BROCKWELL: We have the two chemicals, DSP and TSP, which are di- and tri-phosphates, some type of phosphates, and the other is sulfuric, so we have two different things. Chemistry more or less samples the boilers daily or every other day, on a surveillance, just to tell us what we have in it, what they recommend we add to the boiler.

MR. JORDAN: Even if it's in wet layup like this, when it's just sitting there waiting to go?

MR. BROCKWELL: When a boiler's sitting in standby, it's more or less in hot standby. It's heated up and pressurized, but only to 60 pounds pressure, and you try to keep -- the conductivity's kept in it, circulating. The boiler is bottled up, more or less, just with an immersion heater in it. It just keeps it warm enough where it will start a lot easier then from cold.

MR. CONTE: That's normal, full-power: you keep one of the boilers in hot standby.

MR. BROCKWELL: We try to keep one in hot standby for that purpose.

MR. CONTE: So there is some circulation -- I guess there's not much feedwater circulation, since there's no demand for it.

MR. BROCKWELL: No. Everything is pretty much right there. A little bit of the steam comes off of it to keep in the deaerator, which is on the suction side of the feed pumps.

MR. CONTE: So in hot standby, if you're going to add chemicals, somehow you've got to get the water up and then drain it down, I guess, when you're adding chemicals. Is that how you do it when it's in standby?

MR. BROCKWELL: When it's in standby, there's a recirculation pump inside the boiler itself that now we try to keep running --

MR. CONTE: Oh, I see.

MR. BROCKWELL: -- so it will keep it circulating throughout the boiler.

MR. CONTE: So you just add chemicals.

MR. BROCKWELL: So you're adding chemicals right through the circulation system. It injects right into the feed line of the boiler, because there is always a little

bit of feed going onto it.

MR. CONTE: On a routine basis, are there instructions in the procedure for injecting chemicals?

MR. BROCKWELL: Yes.

MR. CONTE: Do you use them, generally?

MR. BROCKWELL: Yes.

MR. CONTE: Okay. I think that's it.

MR. JORDAN: I've got one more question. It's a combined question, or you can consider it separate questions.

MR. BROCKWELL: Okay.

MR. JORDAN: That is, of the actions that you did for verifying the scram discharge header low pressure in the aux boiler, were there either things that were available to you or you had that you thought were extremely important to have -- and in fact you had them -- and were there any things out there that you didn't have that you wish you had, to assist you in accomplishing your mission? Examples are procedures for the aux boiler, or training, or a wrench -- gee, you wish that you had a wrench hanging at this location in order to accomplish this thing quickly, and it's not there, and as a result you had to run back and get it. You know, was there something that you felt that -- Gee, I'm glad that wrench was there, or, No, I'm glad it wasn't there, or, I wished I had one -- those types of things. Was

there anything that you either wished you had or you're glad that you didn't have?

And the answer to the question could be that not everything went spectacular.

MR. BROCKWELL: I didn't find myself looking for anything in particular or having any problems finding the material in the area that I needed; procedure references were there. So when anything I went out and did, I felt very comfortable with. I didn't feel lost with anything. I knew what I was looking for. So I had prints to verify what I was looking for. So in that case I had all the material I needed; training aspect, there isn't much you -- you can't train somebody where every pressure indicator is in the plant because there's too many local indications that come off of pressure transmitters themself. Most of the time you would rely on the transmitter so you would have to find the transmitter and hopefully just by going around you would know a little bit or an idea -- you can at least be able to trace the line back. So, I don't think they feel I was missing anything or anything else could have helped me more.

MR. JORDAN:

Because everybody's trying to -- you actually knew where the scram discharge air header pressure was? Is everybody trained on that or is that something that you uniquely had that information?

MR. BROCKWELL: No. That's a general training, at least in the area, yes.

MR. JORDAN: A book that exists but then taking you out and showing you where at?

MR. BROCKWELL: Yeah. Because there's walk throughs on all the systems and now I guess with the way they're training out new operators they'll do the system -- they'll learn about the system and then later in the week they'll walk -- try to walk down the systems a little bit more and through our round sheets, anyway, you're checking right in that area so, you see it enough times you kind of get to know what it is.

So you did not know that you had any unique information that probably nobody else would have had.

MR. CONTE: Did you know why you were verifying that air header? What's the air header pressure being zero mean to you?

MR. BROCKWELL: I knew that the scrammer header had to be vented. Well, the way -- the ARI valves would only open up if they had a high pressure or alternate rod insertion.

I was trying to figure this out this morning, talking with somebody, exactly why I was out verifying this, or if it normally would be zero after a normal scram. I don't really understand the system totally enough to -- on

why I looked at or what I was looking for or when it would bleed off.

So, I have a basic knowledge of the system, but to describe it, I couldn't do it.

MR. CONTE: Okay. Do you know why you're getting aux boiler on the line?

MR. BROCKWELL: Pardon?

MR. CONTE: Do you know why you were getting the aux boiler on the line?

MR. BROCKWELL: Yes. I knew we had to supply steam seals to the turbine because they were trying to keep a vacuum, I guess, at that point in the condenser which that helps.

MR. CONTE: Okay.

MR. JORDAN: That's it David.

MR. CONTE: We're off the record.

[Whereupon, at 11:41 a.m., the taking of the interview was concluded.]

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: Int. Of DAVID BROCKWELL

DOCKET NUMBER:

PLACE OF PROCEEDING: Scriba, N.Y.

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.

Ian Rothrock

IAN ROTHROCK
Official Reporter
Ann Riley & Associates, Ltd.

07-1048-91

OFFICIAL TRANSCRIPT OF PROCEEDINGS

Agency: Nuclear Regulatory Commission
Incident Investigation Team

Title: Nine Mile Point Nuclear Power Plant
Interview of: DAVID BROCKWELL

Docket No.

LOCATION: Scriba, New York

DATE: Wednesday, August 21, 1991 PAGES: 1 - 24

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

9305070294

Exhibit 3-1 (continued)

ADDENDUM TO INTERVIEW OF David Brockwell / NAOC
(Name/Position)

Page	Line	Correction and Reason for Correction
3	15	more or less what you start at
3	20	(why) if
6	1	floor to the control rm.
12	13	(PA-139) PI-139
13	17	(upso --) up so easy.
13	22	(--) no problems
16	23	(--) Rx theory, and systems

Page 1 of 1 Signature [signature] Date 8/23/91

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

INCIDENT INVESTIGATION TEAM

- -

Interview of :

DAVID BROCKWELL :

(Closed) :

- -

Conference Room B
Administration Building
Nine Mile Point Nuclear
Power Plant, Unit Two
Lake Road
Scriba, New York 13093
Wednesday, August 21, 1991

The interview commenced, pursuant to notice, at 11:14 a.m.

PRESENT FOR THE IIT:

Michael Jordan, NRC

Rich Conte, NRC

P R O C E E D I N G S

[11:14 a.m.]

MR. JORDAN: It's August 21st, 1991, it's about ten minutes after 11. We are at the Nine Mile Point Unit Two in the P Building, we're conducting interviews concerning a transient that occurred on August the 13th, 1991.

My name is Michael Jordan, I'm with U.S. NRC out of Region III.

MR. CONTE: I'm Rich Conte, NRC Region I.

MR. BROCKWELL: I'm David Brockwell and I'm at Plant Unit Two. I'm a nuclear auxiliary operator C.

MR. JORDAN: Okay, David, why don't you just give us a background on your experience, as far as your nuclear experience and your previous experience?

MR. BROCKWELL: In '86 I got out of college from Allegheny with a degree in math and economics. I was hired on here in September '86 as a utility mechanic for the security department, more or less a janitor. Then I went into the buildings and grounds department the following year, in the fall of '87, and I was bumped out there through our union bumping process and ended up in the plant. Then in May '89 I came into operations; that was a big change for me, going from pulling garbage to learning something. I've been in the department since then; moved up

from an AOB to NAOC.

MR. JORDAN: Can you give us what they mean?

MR. BROCKWELL: Aux operator B to a nuclear auxiliary operator C.

MR. JORDAN: Okay.

MR. BROCKWELL: To the time in training from the department.

MR. CONTE: What's the typical progression here? It's an aux operator A, B --

MR. BROCKWELL: There's no A --

MR. CONTE: Oh.

MR. BROCKWELL: -- aux operator.

MR. CONTE: It's just an aux operator?

MR. BROCKWELL: It starts out right at a B operator which is more or -- that's what you process as getting into the department and an interview.

MR. CONTE: Okay. And then nuclear auxiliary operator C?

MR. BROCKWELL: Yes. That's the next step. I don't know why there's a nuclear aux operator B, but it's just --

MR. CONTE: And then what, D?

MR. BROCKWELL: No, then the next step is an E operator which is our licensed operator.

MR. CONTE: Licensed operators, okay. Thank you.

MR. JORDAN: You're currently non-licensed?

MR. BROCKWELL: Yes.

MR. JORDAN: Okay. David, why don't -- is there anything else as far as your experience goes?

MR. BROCKWELL: No, not really.

MR. JORDAN: Okay. Why don't you, in your own words tell us -- are you on day-shift? What shift are you on?

MR. BROCKWELL: This week I'm on -- I'm on day shift this week. I'll be going on to nights next week.

MR. JORDAN: The event, which shift were you on?

MR. BROCKWELL: I was on days. We were the shift -- we would have been the shift of record coming in on days. So we were expecting to take the turnover at 6 a.m.

MR. JORDAN: Okay. Why don't you just walk through when you came to the gate that morning?

MR. BROCKWELL: Came through the gate that morning, probably just before 6:00. It looked like there wasn't a lot of steam coming out of the cooling tower, but you can never tell, depending on the whether conditions; walking into the yard -- walking towards the locker room I run into a mechanic and he said "The sticks were up in the yard." So that kind of cleared my mind that we must have taken a scram or some kind of transient.

MR. JORDAN: What does sticks up in the yard mean?

MR. BROCKWELL: The output breakers -- output stabs, if you want to call them -- from the transformers were open. So we had no power going out, so something was going on. So from there I proceeded just to grab my boots and keys and hardhat and straight up to the control room which is probably just before 5:00 -- just before 6:00, excuse me, where I had noted that all the panels were kind of dark. And from there it was just waiting instructions, letting them know I was here, and awaiting instructions on where they needed me. Just after --

MR. CONTE: What did you -- before you got to the control room, did you see any lighting problems on the way up?

MR. BROCKWELL: Yes. On my way up I noticed there was -- I caught a couple operators going up the elevator and it was dark -- with flashlight in hand.

MR. CONTE: The elevator in the aux service building --

MR. BROCKWELL: There was no light -- lighting in the elevator in the aux service building.

MR. CONTE: No light except for that we understand that the floor lights were on?

MR. BROCKWELL: Yes. The floor lights were lit. And that was the only lighting in there.

MR. JORDAN: Is that how you got from the ground

floor to --

MR. BROCKWELL: Yes.

MR. CONTE: Where exactly is this locker room? Is it in the control building or is it in the aux service building?

MR. BROCKWELL: I guess it would be considered aux service building. It's just across from our cardox tanks. Just as you walk in the plant there.

MR. CONTE: 261 elevation?

MR. BROCKWELL: Right. Right when you walk in.

MR. CONTE: Okay.

MR. BROCKWELL: From the aux -- aux service building -- auxiliary service building.

MR. CONTE: Okay. So you got to the control room you reported in that you're here?

MR. BROCKWELL: Yes.

MR. CONTE: Were you in the Beehive or in the control room?

MR. BROCKWELL: No, right in the control room.

MR. CONTE: Okay. Why did you go to the control room instead of the Beehive?

MR. BROCKWELL: Because they're not going to call it -- just continually call people over there; at that point it's easiest just to go straight in and stay in the back just so that -- or at least out of the way of everything.

All the commotion so they can see, right off the bat, who they have who they can send and where to go.

MR. CONTE: Did you know a site emergency had been declared?

MR. BROCKWELL: No. Not at that point because there was no -- we didn't any -- I found out at that point that we had no gaitronic systems, we had power for calling you, but I found that on the way up the elevator, people were telling me that UPS's were down.

MR. CONTE: Okay. All right. So what was the first assignment when you were waiting?

MR. BROCKWELL: A little bit after six, probably five after or so. My CSO, which would be David Rathbun, asked me to verify that the scram air discharge -- the scram air header was discharged. So our biggest problem was finding local indications -- we went right to the prints, looking just downstream of our ARI valves to find a gauge that would show me exactly that it didn't rely on any kind of power or anything, just an air pressure gauge itself. That the air header was bled off.

MR. CONTE: Okay.

MR. BROCKWELL: So after a little bit of discussion I Xeroxed a copy and went out and found it -- a little discussion between people of where it possibly could be because nobody was exactly sure.

MR. CONTE: Okay. Do you remember the pressure gauge number?

MR. BROCKWELL: In fact, I just looked at it. PI-139. I don't remember the prefix, probably RDS or --

MR. CONTE: RDS, rod drive system?

MR. BROCKWELL: Yeah.

MR. CONTE: Okay. Okay, could you tell us your path from the control room down to this valve and what did you observe from the point of view of lighting? Any problems?

MR. BROCKWELL: Um, I took the quickest way down, I took the stairs next to the elevator; it's easier than waiting for the elevator. I can fly down the stairs quicker.

MR. CONTE: This was that same elevator in the aux service building?

MR. BROCKWELL: Yes, in the aux service building, so I took the aux service building stairs.

MR. CONTE: How was the stairwell there? That had lights?

MR. BROCKWELL: Um, I don't remember off hand. It was not something I was concerned with. Just hold on to the railings and get down. From there over to the reactor building air lock to get into the reactor building on 261 all the way around, got into the reactor building, just

walking through, you just peak around to see if anything was out of the ordinary, but all the way around on the north side --

MR. JORDAN: No lighting problems?

MR. BROCKWELL: No. Not that I noticed.

MR. JORDAN: Okay.

MR. CONTE: Help me a little here. When you're looking at the reactor building from the security -- from the Unit Two security building you see a -- a large -- it looks like a stack, I understand that's a stairway going up the building --

MR. BROCKWELL: Yes.

MR. CONTE: -- that kind of protrudes out?

MR. BROCKWELL: Right.

MR. CONTE: The air lock -- some people have mentioned coming down that stairway, exiting and coming out into the yard, going by the trailers --

MR. BROCKWELL: Right.

MR. CONTE: -- and then going back into cardox room. Is that the path you used, or is this a different path to get into the reactor building?

MR. BROCKWELL: Oh. Okay. There's two entrances to the reactor building that we mainly use, which one through the trailer access which -- I've got to think, I loose my bearing when I'm in a round building. The trailer

is probably a southwest entrance or a west entrance they're calling it, I think, and I think the other airlock is considered an east entrance or a southeast entrance.

MR. CONTE: You used the east entrance?

MR. BROCKWELL: Yes.

MR. CONTE: Okay.

MR. BROCKWELL: So I had to pass, more or less, inside pass by that other stairway; go all the way around past the northside of the reactor track bay around past that all the way over into the rod flow control area or filter area over in that area was where the gauge was found.

MR. CONTE: Do you have to suit up to get into the reactor building?

MR. BROCKWELL: No.

MR. CONTE: Okay. So you enter into the building and you're looking around and you didn't see anything unusual?

MR. BROCKWELL: Not at that point, no. I was mainly concerned on getting over and finding this pressure indicator and I wasn't sure exactly where it was so I knew where the ARI valves I was looking for was and I had a little Xerox of the print, so mainly it was tracing it back -- just tracing lines back to the gauge, which was real close by so it didn't take me too long.

MR. CONTE: Did you find it?

MR. BROCKWELL: As soon as I found it I verified that it was zero, called the control room back and I think it was exactly at the point where they re-energize their power.

MR. JORDAN: How did you call the control room?

MR. BROCKWELL: With the land line, if you want to call it or dial telephone.

MR. JORDAN: There's one close by?

MR. BROCKWELL: Dial telephone close by.

MR. JORDAN: Now you know, loss of power came back when you were in your --

MR. BROCKWELL: When I called the control room, they said they had it back and so they -- my information was -- it was helpful, but they already had it, apparently on indication from the control room.

MR. JORDAN: Verification that this gauge read zero, that it was -- the discharge header, how did you do that?

MR. BROCKWELL: What do you mean by that?

MR. JORDAN: Did you check by the print -- by the gauge number versus the gauge, or did you walk the air header back --

MR. BROCKWELL: I walked both ways. In order to find the gauge, I had to walk the air header back.

MR. JORDAN: So it was tagged with --

MR. BROCKWELL: And plus it was tagged with the instrument number.

MR. CONTE: 139?

MR. BROCKWELL: Right. Because just beside that I think there's a pressure transmitter so I can verify the PT-139 versus the PI-139. It comes off of the same -- right at the same point. There's a transmitter and a local indicator.

MR. JORDAN: So there wasn't any overhead that was actually low enough that you could see it. Then you called the control room and told them that it was --

MR. BROCKWELL: I told them that the air header PA-139 -- I tried telling the exact person that sent me out so he could refer it, to make it as short as possible what I was saying.

MR. JORDAN: And it was zero, did you say?

MR. BROCKWELL: Yes, that the air header was zero.

From there, I just proceeded back up to the control room, to await further instructions.

MR. JORDAN: And your transition back to the control room -- did you go back the same way? Of course power is back now, so I guess there was no problem with lighting or anything else that you saw.

MR. BROCKWELL: No. I don't even know at that point which way I went back.

MR. JORDAN: Okay.

But as far as going to and from -- in and out of the plant, lighting, as far as you know, was not a problem.

MR. BROCKWELL: I didn't notice anything at that point.

MR. JORDAN: You're back in the control room.

MR. BROCKWELL: I just sat around a little bit, until they sent me a couple minutes later -- they asked myself and one other person, Jim Stevens, to respond to the aux boilers and get them started up, so we could start supplying steam.

MR. CONTE: I was in an interview with, I think, Jim Stevens. I think he mentioned that -- he's an NAOC.

MR. BROCKWELL: Yes.

MR. CONTE: Was he involved with the aux boilers, too? He gave me the impression the aux boilers came up real smooth. He said he never saw aux boilers come up so --

MR. BROCKWELL: No. I've never got an aux -- Between the two of us, we were really surprised, because normally it takes at least two people to get a boiler fired up quick and get it going, and it was super-easy. It was the first time we had -- that's only the Bravo boiler.

MR. CONTE: There are two, A and B?

MR. BROCKWELL: There are two boilers, A and B. Our Alpha one was in nitrogen layup, so it took us a little

while.

MR. CONTE: How would you describe the effort, between you and Jim? You were helping one another? Who was really responsible for getting the boiler up all by himself, or what?

MR. BROCKWELL: I don't think either of us took total responsibility or the other, because it depended on where we were at. We both knew exactly what had to be done, so I think he took the first effort of firing the boiler up, and I was supporting him at that point, doing miscellaneous things in the startup of it.

MR. CONTE: Was either one of you using a procedure?

MR. BROCKWELL: Yes. The procedure is right there, and through a lot of times firing them up, just background stuff -- along with the procedure, you can think of little things to check.

MR. CONTE: Based on your experience.

MR. BROCKWELL: Based on experience. A lot of it down there is, you check things through experience that aren't in the procedure, but we didn't have any problems, which was something very different down there, for the first time.

MR. CONTE: Do you have anything else, Mike?

MR. JORDAN: No, I don't have anything else.

MR. CONTE: I do have another question. I'm trying to formulate it in my mind. You mentioned the aspect that there are a lot of things you do based on your experience. Wouldn't it be nice to get that into the procedure for the new guy or the next guy to --

MR. BROCKWELL: I know what you're saying, experience-related things in the procedure, maybe precautions. I don't think a lot of it can be, because it comes with just a feel, some of it. Some things -- well --

MR. CONTE: Just an innate skill?

MR. BROCKWELL: Yes.

MR. CONTE: A skill within you.

MR. JORDAN: What about training? You took over as an operator in '89, and you went out there to start the boilers for the first time. Is there a training process that says, Okay, fine, we're going to sit you down in a classroom and teach you how to start and operate this thing and then take you out and show you how to operate it and then let you operate it?

MR. BROCKWELL: The way it's set up now, yes. They pretty much go to training first. Or I spent a lot of time on shift before I went to the formal training -- in other words all the system. I spent a lot of time on shift, tagging along with people. I found shift time like that to be more helpful. Just hands-on you can learn, I feel, a lot

more than you can out of a book.

MR. JORDAN: Okay.

MR. BROCKWELL: The book explains how it works, but to actually work it you need the time in the systems. This past year, I purposely didn't put my name in for license class because I felt I wanted another year in the plant. I feel you can learn more in the plant, hands-on, than you can right out of a book. I feel it's a lot more helpful.

MR. JORDAN: Is there a continuous training program, as far as you know?

MR. BROCKWELL: Yes, there is. Our non-licensed --

MR. JORDAN: Besides the operating licensing area, how about yourself, in the non-licensed area? If you stayed in the non-licensed are, is there a continuous training program that you keep going back to, to make sure that you keep trained on the areas that you have responsibility on?

MR. BROCKWELL: Yes. It seems like every cycle, the way we rotate our six-week cycle right now, when you go into training, right now they're prepping us a little bit for reactor theory. One day, probably two days, out of each five-day training cycle, we're learning -- they're trying to prepare for license class, also, to give you a basic knowledge, so you're familiar with the terminologies used,

so you don't want into a theory course and have no idea what they're talking about at all.

But we also do system training. A lot of it is review -- you've had it before -- but sometimes you'll catch something different. Each time they might go a little bit deeper.

MR. JORDAN: Is there a test or an evaluation that goes along with that?

MR. BROCKWELL: There's a test every cycle on whatever you were trained on.

MR. JORDAN: Written test, or performance test?

MR. BROCKWELL: Written test.

MR. JORDAN: You rotate with the shift in the training?

MR. BROCKWELL: Yes.

MR. CONTE: Can you give us an example -- you said that you check things that are not really in a procedure, and to a certain extent you can't put everything in a procedure. I think I understand that, but could you give us an example of one of those things, when you were starting the aux boiler?

MR. BROCKWELL: Oh, on this one?

MR. CONTE: Is there some unique control aspect of some point -- getting the fuel into the --

MR. BROCKWELL: No, the boiler -- One aspect

would be starting it up, for the conductivity of the boiler itself. They give you a range, probably starting out at maybe 900 or 1,000 micromoles, once you get the thing fully operating and supplying everything you need at 1800 micromoles, but where along the line you need it tells you, but if you started a boiler at that much, at a high level of conductivity, you would have problems controlling it right in the beginning, because it would heat up too quick; you'd pressurize it took quick and probably lose it on high pressure a lot. I guess at that point it's a feel on where the conductivity level is a good place to start it and how far you're opening your valves at once.

Once you get the boiler pressurized, it says to slowly pressurize the header going out to -- in this case they're reboilers, the first thing we were supplying. We don't want to just wing that valve open; it's slowly opening it while one person's watching pressure down below, so we don't lose the boiler to trip due to low level, supplying all your steam at once, just giving it an outlet and just letting it go.

MR. CONTE: Isn't there a precaution in the procedure that tells you about slowly opening that valve?

MR. BROCKWELL: Yes. It's slowly opening up to pressurize it, but I guess at that point how slow is slow?

MR. CONTE: Yes. Some people could be very heavy-

handed.

MR. BROCKWELL: Right. It's just a feel, between the person at the boilers recognizing, whoa, slow down.

MR. CONTE: I've got a better feel for what you're talking about now, now that you say that.

MR. BROCKWELL: Right.

MR. CONTE: How do you control this conductivity, for example? You say you'd rather start out at the low end. How do you control the conductivity of the water?

MR. BROCKWELL: We have the two chemicals, DSP and TSP, which are di- and tri-phosphates, some type of phosphates, and the other is sulfuric, so we have two different things. Chemistry more or less samples the boilers daily or every other day, on a surveillance, just to tell us what we have in it, what they recommend we add to the boiler.

MR. JORDAN: Even if it's in wet layup like this, when it's just sitting there waiting to go?

MR. BROCKWELL: When a boiler's sitting in standby, it's more or less in hot standby. It's heated up and pressurized, but only to 60 pounds pressure, and you try to keep -- the conductivity's kept in it, circulating. The boiler is bottled up, more or less, just with an immersion heater in it. It just keeps it warm enough where it will start a lot easier then from cold.

MR. CONTE: That's normal, full-power: you keep one of the boilers in hot standby.

MR. BROCKWELL: We try to keep one in hot standby for that purpose.

MR. CONTE: So there is some circulation -- I guess there's not much feedwater circulation, since there's no demand for it.

MR. BROCKWELL: No. Everything is pretty much right there. A little bit of the steam comes off of it to keep in the deaerator, which is on the suction side of the feed pumps.

MR. CONTE: So in hot standby, if you're going to add chemicals, somehow you've got to get the water up and then drain it down, I guess, when you're adding chemicals. Is that how you do it when it's in standby?

MR. BROCKWELL: When it's in standby, there's a recirculation pump inside the boiler itself that now we try to keep running --

MR. CONTE: Oh, I see.

MR. BROCKWELL: -- so it will keep it circulating throughout the boiler.

MR. CONTE: So you just add chemicals.

MR. BROCKWELL: So you're adding chemicals right through the circulation system. It injects right into the feed line of the boiler, because there is always a little

bit of feed going onto it.

MR. CONTE: On a routine basis, are there instructions in the procedure for injecting chemicals?

MR. BROCKWELL: Yes.

MR. CONTE: Do you use them, generally?

MR. BROCKWELL: Yes.

MR. CONTE: Okay. I think that's it.

MR. JORDAN: I've got one more question. It's a combined question, or you can consider it separate questions.

MR. BROCKWELL: Okay.

MR. JORDAN: That is, of the actions that you did for verifying the scram discharge header low pressure in the aux boiler, were there either things that were available to you or you had that you thought were extremely important to have -- and in fact you had them -- and were there any things out there that you didn't have that you wish you had, to assist you in accomplishing your mission? Examples are procedures for the aux boiler, or training, or a wrench -- gee, you wish that you had a wrench hanging at this location in order to accomplish this thing quickly, and it's not there, and as a result you had to run back and get it. You know, was there something that you felt that -- Gee, I'm glad that wrench was there, or, No, I'm glad it wasn't there, or, I wished I had one -- those types of things. Was

there anything that you either wished you had or you're glad that you didn't have?

And the answer to the question could be that not everything went spectacular.

MR. BROCKWELL: I didn't find myself looking for anything in particular or having any problems finding the material in the area that I needed; procedure references were there. So when anything I went out and did, I felt very comfortable with. I didn't feel lost with anything. I knew what I was looking for. So I had prints to verify what I was looking for. So in that case I had all the material I needed; training aspect, there isn't much you -- you can't train somebody where every pressure indicator is in the plant because there's too many local indications that come off of pressure transmitters themself. Most of the time you would rely on the transmitter so you would have to find the transmitter and hopefully just by going around you would know a little bit or an idea -- you can at least be able to trace the line back. So, I don't think they feel I was missing anything or anything else could have helped me more.

MR. JORDAN:

Because everybody's trying to -- you actually knew where the scram discharge air header pressure was? Is everybody trained on that or is that something that you uniquely had that information?

MR. BROCKWELL: No. That's a general training, at least in the area, yes.

MR. JORDAN: A book that exists but then taking you out and showing you where at?

MR. BROCKWELL: Yeah. Because there's walk throughs on all the systems and now I guess with the way they're training out new operators they'll do the system -- they'll learn about the system and then later in the week they'll walk -- try to walk down the systems a little bit more and through our round sheets, anyway, you're checking right in that area so, you see it enough times you kind of get to know what it is.

So you did not know that you had any unique information that probably nobody else would have had.

MR. CONTE: Did you know why you were verifying that air header? What's the air header pressure being zero mean to you?

MR. BROCKWELL: I knew that the scrammer header had to be vented. Well, the way -- the ARI valves would only open up if they had a high pressure or alternate rod insertion.

I was trying to figure this out this morning, talking with somebody, exactly why I was out verifying this, or if it normally would be zero after a normal scram. I don't really understand the system totally enough to -- on

why I looked at or what I was looking for or when it would bleed off.

So, I have a basic knowledge of the system, but to describe it, I couldn't do it.

MR. CONTE: Okay. Do you know why you're getting aux boiler on the line?

MR. BROCKWELL: Pardon?

MR. CONTE: Do you know why you were getting the aux boiler on the line?

MR. BROCKWELL: Yes. I knew we had to supply steam seals to the turbine because they were trying to keep a vacuum, I guess, at that point in the condenser which that helps.

MR. CONTE: Okay.

MR. JORDAN: That's it David.

MR. CONTE: We're off the record.

[Whereupon, at 11:41 a.m., the taking of the interview was concluded.]

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: Int. Of DAVID BROCKWELL

DOCKET NUMBER:

PLACE OF PROCEEDING: Scriba, N.Y.

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.

Ian Rothrock

IAN ROTHROCK

Official Reporter
Ann Riley & Associates, Ltd.