

OFFICIAL TRANSCRIPT OF PROCEEDINGS

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Title: INTERVIEW OF: MICHAEL LACKEY

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U. S. NUCLEAR REGULATORY COMMISSION

INTERVIEW OF:

MICHAEL BRIAN LACKEY

Main Conference Room
Administration Building
Vogtle Electric Generating Plant
Waynesboro, Georgia

Tuesday, March 27, 1990

The interview commenced at 4:02 p.m.

APPEARANCES:

On behalf of the Nuclear Regulatory Commission:

AL CHAPFEE
WARREN LYON
BILL JONES

On behalf of INPO:

PAUL DIETZ

On behalf of CP&L:

MIKE JONES

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PROCEEDINGS

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2 MR. CHAFFEE: This is March 27th at four o'clock.
3 This is IIT Team at Vogtle.

4 BY MR. CHAFFEE:

5 Q Would you please state your name and your position
6 and what role you played in the event and take us through
7 what transpired as you saw it.

8 A Okay. My name is Michael Brian Lackey. I'm the
9 Outage Planning Manager for the Vogtle second refueling
10 outage. I'm in an acting capacity while my boss was in SRO
11 school over the last year. EOF Manager is part of the
12 Emergency Response Organization. On the day of the incident
13 -- I'll go ahead and describe my actions during that day.

14 I was sitting in Jim Swartzwelder's office; we had
15 just been discussing outage preparations, or where we were
16 in the outage, when the lights in the building went off. I
17 immediately heard the page announcement that said Unit 2
18 reactor trip. And at that time -- and lights frequently go
19 out in the Admin Building on a Unit 2 trip. They usually
20 come right back up, but they didn't come right back up.
21 Also, I noticed coming from the 1-A diesel generator
22 building, the stack, that there was smoke coming out of the
23 diesel building. So I figured the 1-A diesel had started
24 and with the Unit 2 trip, then right off the bat, I figured

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1 we had some kind of a switchyard problem. So, I grabbed my
2 hard hat and went out to the switchyard.

3 When I got to the switchyard, I saw the phase coming
4 into the switcher there down on the ground, the insulator
5 laying on the ground. I saw beyond that -- on the other
6 side, I saw the truck, the truck driver and the security
7 guard. Everyone was fine, no one was injured. They were
8 standing well away on the other side there. It looked like
9 I was the first one there after the incident had occurred,
10 so I ran to the control room.

11 When I got into the control room, right off the bat
12 it appeared to me that their recovery actions were directed
13 towards getting the A RAT back. Then I informed the OS at
14 that time that, you know, it was going to be hours before
15 the A RAT was available and that our efforts needed to be
16 channeled towards getting the B RAT back because the work
17 had completed on that and we were ready to restore that RAT
18 to service. The reason that RAT had not been returned to
19 service previously is because one, it would require running
20 the diesel and moving the supply breaker over from the A RAT
21 supply to the B RAT supply, since it is designed to only
22 have one breaker, so you can only tie it to one of the two
23 RATS at a time. So the diesel would have to be carrying the
24 bus and actually move the breaker over from the A RAT
25 cubicle to the B RAT cubicle and then close it in. The B

1 diesel was under our maintenance and we would have to do a
2 dead bus transfer and we didn't want to do a dead bus
3 transfer, especially out in mid-loop when both trains in
4 RHR needed to be operable. So that's the reason the B RAT
5 had not been restored to the bus. We would have had to kill
6 the bus or run the diesel which wasn't available.

7 So when I informed them that the work was complete
8 on it -- at that time, Barney Beasley had followed me into
9 the control room, I asked him to get up with Jack Bourne,
10 who is Division Operator, and confirm that the work was
11 completed and initiate getting a switching order to get the
12 RAT back in service. He worked with the control room
13 personnel. He went out to the switchyard and worked with
14 the control room personnel there.

15 At that time, I -- as the Outage Manager, I really
16 was constantly in control -- prior to the event, constantly
17 in contact with the Maintenance Department letting them know
18 what their priorities were, what activities needed to be
19 worked for the outage and, of course, those go through the
20 Control Room to get approved to work. But as far as the
21 outage schedule, I was constantly directing their efforts.

22 I know all of the mid-loop work that was ongoing at
23 the time. We had an accumulator discharge valve that had
24 been disassembled and they had lapped the seat and were
25 putting that back together, but at that point it was apart.

1 We had a charging check valve that had the bonnet
2 disassembled for just a normal check valve PM, preventative
3 maintenance work order as part of our SOER 8603 PM program
4 on all of our check valves in the plant. We were doing
5 that and we had steam generator manways off on generators 2
6 and 3. They were buttoned up on 1 and 4. All the nozzle
7 dams had been removed. Our pressurizer manway was off and
8 our cono-seals were open on top of the reactor vessel head.

9 Q What are the cono-seals? Do those run the control
10 rods?

11 A They are around -- they are in the same location
12 basically as control rods but there are four penetrations
13 into the reactor vessel head where your thermocouples
14 actually enter. You will have a group of a dozen or so
15 thermocouples that will enter these cono-seals. Those were
16 not hooked back together because -- sealed back up, since we
17 had not fully tensioned the head. We had made all but the
18 last pass on the reactor head for tensioning.

19 The -- so at that time, John -- the OS was focusing
20 heavily on getting the diesel up and running and I mentioned
21 to John that I was going to try and get all the mid-loop
22 work buttoned up so if we needed to increase water level we
23 could do that and he said great. I also told him that, you
24 know, as part of the discussion on the RATS -- the A RAT not
25 being available, I told him that I would get Maintenance to

1 roll the supply breaker from the A supply to the B supply.
2 That's an electrician's job to do that. They've got a
3 special tool for doing that. A third wheel or whatever. He
4 concurred. So at that time, I called the Maintenance
5 Department and talked to Dusty Adams and basically gave him
6 those instructions. That we needed Electrical support to
7 get those breakers moved right away. We needed to button up
8 the steam generator manways on 2 and 3. We needed to put
9 the accumulator discharge valve and the charging check valve
10 back together as soon as possible and I asked him to verify
11 that the pressurizer manway was still off. He said he
12 thought it was off and he would have his people go and
13 verify that it was off because we knew that we may need that
14 for a vent path. We talked about closing the equipment
15 hatch and putting the interlocks back on the personnel
16 airlock. At that time all of that work was initiated.

17 While I was talking to Mr. Adams, Jim Swartwelder,
18 the Ops Manager asked me to go out to the diesel room and
19 help with the emergency start, make sure things were going
20 smoothly there. So as soon as I got off the phone with
21 Dusty and felt comfortable that all of those actions were in
22 progress, I reported back to John that that was happening.

23 They had made a page announcement to evacuate
24 Containment while I was on the phone and I went back and
25 John said, I think we need to clarify that because we want

1 to continue certain jobs in Containment working. I asked
2 John to maybe make a clarifying page announcement. I didn't
3 hear if that happened or not.

4 And so from there, I went out to the Diesel
5 Building. When I walked by, I noticed that they were
6 closing equipment hatch and making good progress there --
7 since you have to walk by that to get to A Diesel Building.

8 When I went into the Diesel Building, John Acree and
9 several other operators were out there and I had the sound
10 powered head phones set up. They were verifying -- since
11 the initial indications were that we tripped on jacket water
12 pressure, they were verifying that there was no leaks on the
13 jacket water sensing line and the valves were not isolated
14 and all that appeared good. John was giving all the
15 instructions as far as what to monitor. He had people set
16 up monitoring the different parameters on the diesel since
17 we were going to do an emergency start which would block
18 many of the normal trips on the diesel. But John had that
19 well under control. I was just really there as an extra set
20 of eyes. I didn't really provide any direction or anything
21 to the operators out there.

22 About the time they got the diesel started and
23 started sequencing on the loads, NSCW and RHR, I heard the
24 announcement for the site area emergency. It might have
25 been a few minutes before that and I wanted to make sure

1 that we did keep the diesel running and did get those loads
2 on. As soon as that happened, I took off and went to the
3 EOF since that is my area during an emergency, to man the EOF
4 facility.

5 So, I went over there. It wasn't long after we got
6 there and started to set up that the -- and I made contact
7 with the TSC as soon as I got there, the emergency was
8 shortly thereafter downgraded to an alert. So I figured we
9 would stay in a standby status and not actually activate and
10 take over some of the communications, dose assessment type
11 functions that we normally would during a site area
12 emergency or a general emergency. But we went ahead and
13 fully staffed and readied both dose assessment
14 communications, off-site communications, our admin support
15 there and our public information. We started monitoring the
16 incident and the actions that were taking place and trying
17 to coordinate some of the press releases that were starting
18 to come out of the Atlanta/Birmingham area there.

19 I guess during the -- while I was in the EOF, we
20 didn't take on a significant role as far as recovery or
21 whatever. That was primarily handled out of the TSC since
22 it wasn't an alert by the time we were ready to activate.

23 Q While you were in EOF did you become aware of any
24 problems in making notifications to the local...

25 A Yes. I was contacted by a gentleman from GEMA and

1 I believe the Georgia Federal Protection Agency. I'm not
2 sure of his exact title, but two gentlemen. It should be in
3 the EOF log, the people I talked to, and they said they had
4 had difficulty in getting initial notifications and they
5 asked me several questions about potential releases from the
6 Fuel Handling Building and things like that. I tried to
7 explain to them that we had no releases that anyone was
8 aware of. That we did still -- since we had the normal
9 power available, we still had our normal HVAC system in the
10 spent fuel -- the Fuel Handling Building, we weren't moving
11 any fuel in the Fuel Handling Building and we did not have
12 airborne activity in the Fuel Handling Building before the
13 incident. So, I felt comfortable in letting him know all of
14 those actions, those -- that status.

15 I contacted our communicators that were there and
16 said, well, everyone is answering the roll call now and it
17 seemed that that had been squared away. So, I just made note
18 of that to Ken Holmes who is normally -- he is our Training
19 and Emergency Preparedness Manager. He was there since the
20 EOF is in the Training Center. He came down to the EOF --
21 he's normally a controller during our drills. So, I asked
22 him to make note of that; that that was something we needed
23 to look into and make sure we correct it in the future. I
24 think Ken went ahead and made some phone calls at that time
25 and got some more information on what actually happened.

1 But since that situation had been corrected, I didn't pursue
2 it any further at that time.

3 MR. LYON: Were there any difficulties with the
4 communication facilities at the EOF? Were all of the phones
5 working and everything else?

6 THE WITNESS: All the phones worked. We had one
7 minor problem and that was with the ERF terminal, the actual
8 physical printer that prints the charts. We --

9 MR. LYON: That was unrelated to everything else?

10 THE WITNESS: Oh, yes, that was completely
11 unrelated. All of our equipment worked fine. Our
12 communications all worked fine.

13 MR. LYON: Are you connected to the met tower from
14 there?

15 THE WITNESS: Yes, we can connect through the ERF
16 terminal to the met tower.

17 MR. LYON: Did you do that?

18 THE WITNESS: We did connect and -- when we first
19 set up, we did have a problem getting met tower data and
20 Indira Kochery who was the Dose Assessment Manager in EOF
21 got that up. She called Bush Field, a local airport, and
22 that's our backup information. When we can't get good
23 information, we call them. She did that to get our first
24 information for Dose Assessment. She -- we eventually
25 changed ERF terminals where she was at and once Unit 2

1 stabilized, we gave them the ERF terminal that was plugged
2 in. I don't know if that corrected her problem or not at
3 that time.

4 MR. LYON: So you're not sure if you were ever
5 receiving data direct from the met tower?

6 THE WITNESS: That's correct. I'm not sure if we
7 ever received that direct.

8 BY MR. CHAFFEE:

9 Q Did you guys contact anybody in the TSC about this
10 problem with Georgia not getting notified? Did you have any
11 part in that?

12 A We -- I believe Ken Holmes took that and talked to
13 Skip Kitchens about that. I believe that's the way that
14 happened. They -- I know they were aware later that that
15 was a problem but this was -- you know, this was well into
16 the incident before I got the phone call that alerted me
17 that we had that problem. At that time they had corrected
18 it. I think the TSC had already taken over notifications at
19 that time.

20 Q Oh, you're saying that when you became aware of the
21 fact that there was a communications deal, the people had
22 already been handling it?

23 A Right. That the problem had already been corrected.
24 The TSC had taken over communications and at that point they
25 were getting all of their info. I think the problem was,

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1 since they didn't get the initial notifications, they were
2 concerned that they had missed some information and that's
3 why they were calling us at EOF.

4 Q Oh, I see. So that wasn't -- your impression was
5 that wasn't the first time Plant Vogtle became aware that
6 there was a communications problem. It was a follow up
7 call?

8 A Correct.

9 MR. LYON: Can I go back to the diesel for a little
10 bit?

11 THE WITNESS: Yes, sir.

12 MR. LYON: At anytime that you were in there, did
13 you happen to notice or hear somebody say anything about
14 pressure in the air reservoirs for the diesels?

15 THE WITNESS: No, no, sir, but I remember looking at
16 them and they appeared normal to me. Seems like the 200
17 range.

18 MR. LYON: Two hundred, and this was just before the
19 so called break-glass start?

20 THE WITNESS: Yes, sir.

21 MR. LYON: Were the air compressors that pump up
22 those tanks running or available?

23 THE WITNESS: No, sir. They -- I don't believe they
24 were running. At that time, I don't believe we had any
25 power to those compressors.

1 MR. LYON: You mentioned something about not wanting
2 to do this breaker move because you would have to have the
3 diesel carrying the load while you were in mid-loop. Is
4 there a procedure or a process that assures that kind of
5 action?

6 THE WITNESS: Well, the problem wouldn't be with the
7 diesel carrying the load. The problem was the diesel wasn't
8 available to carry the load, you know, to carry the bus.
9 The diesel -- that was the diesel that was being --

10 MR. LYON: That was being worked on.

11 THE WITNESS: -- worked on.

12 MR. LYON: So you were waiting for that?

13 THE WITNESS: Yes, sir. We would have to get that
14 diesel back and tie it to the bus and hold the bus with that
15 diesel while we opened the supply breaker and moved it to
16 the other supply.

17 MR. LYON: So that would have removed one safety
18 related bus the other one still being...

19 THE WITNESS: Powered from the A RAT.

20 MR. LYON: Plus the A diesel.

21 THE WITNESS: Plus the A diesel.

22 MR. LYON: I understand.

23 THE WITNESS: We would have gotten the B RAT back
24 sooner but we had to have the diesel or do a dead bus
25 transfer and we didn't want to do a dead bus.

1 MR. LYON: You didn't want to take out one of those
2 buses while you were at mid-loop?

3 THE WITNESS: No, sir.

4 MR. DIETZ: When was the B RAT ready?

5 THE WITNESS: It was like the day before. It wasn't
6 a long time.

7 MR. DIETZ: The oil was -- the change was completed
8 on what, Saturday?

9 THE WITNESS: And the dobble testing -- as I recall,
10 it seems like it was just the previous day I had gotten the
11 word that the RAT was through. They were through with their
12 testing. I can find out the exact times for you but that
13 was my -- my understanding was about the day before it was
14 ready.

15 MR. DIETZ: But there really was no pressure to get
16 it back, the diesel is going to be out for another --

17 THE WITNESS: That's correct. We didn't want to do
18 a dead bus transfer. That's why it didn't really stick in
19 my mind. In hindsight it may have been -- it would have
20 saved us time in this incident to go ahead and re-energize
21 it and then it would have been a little quicker. We
22 wouldn't have to move that clearance off of it. We could
23 have just re-energized it, just not had a load on it.

24 MR. DIETZ: Was it Monday sometime that your
25 transmission people reported that their work was already

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1 completed? They had cleared the tags on there?

2 THE WITNESS: Yes, sir, to the best of my -- they
3 hadn't cleared the tags that they were through with it.
4 Now, I would need to check with them too. I don't know if
5 there would be a problem with energizing without putting any
6 load on it or not. I just didn't pursue it because I knew
7 we had to have that diesel back to do our normal tie back.
8 That's how we initially moved the breaker, you know, with
9 the diesel carrying the load and move the breaker. That was
10 our plan to return it.

11 MR. DIETZ: Now, shifting, what was the condition of
12 the reactor coolant pumps during this event?

13 THE WITNESS: They were tagged out the entire time.

14 MR. DIETZ: How about the seals, was there any kind
15 of work going on?

16 THE WITNESS: All that work had completed on the
17 reactor coolant pump seals.

18 MR. DIETZ: What was that work?

19 THE WITNESS: Each outage we go into two of the four
20 reactor coolant pumps and we do a seal inspection where we
21 actually -- we have a cartridge seal design on the pumps for
22 the number two and three seals where we will just pull those
23 out and replace them, but we'll also disassemble and inspect
24 the number one seal.

25 MR. DIETZ: So that requires disconnecting --

1 THE WITNESS: Uncoupling the motor and pump. Our
2 design -- we have pumps with a backseat that actually
3 provides a seal which supposedly you can reflood the RCS,
4 reflood your fueling cavity and still not get significant
5 back leakage past that back seat but we've never -- we've
6 never tried to do that.

7 MR. DIETZ: At the time of the event though, all of
8 the shafts were reconnected and everything was back
9 together?

10 THE WITNESS: Yes, sir.

11 BY MR. CHAFFEE:

12 Q How long prior to Tuesday had that work on the seals
13 been done?

14 A We completed the seal work in the first mid-loop
15 window.

16 Q Do you mean on the way down of the outage or coming
17 back up?

18 A We did that up front in the first mid-loop because
19 our pump design -- if you do try to work them on the back
20 seat like some people do, they go ahead and put it on the
21 back seat and flood up during the outage, they have to use
22 their seal injection line to drain off any leakage that
23 comes past that back seat. Most people's seal injection
24 line comes in below that number one seal runner, the lowest
25 point that you have to get to to do your inspection. Ours

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1 comes out above it. So we can still fill up that cavity and
2 still have a problem with our seal inspection. You know, we
3 would have to set up some kind of special little pump to
4 suck out of there. That's why we chose to do it while we're
5 still drained out at mid-loop, get all that finished, so
6 then when we flood back up, we leave them on the back seat
7 and we don't have to worry about water getting on that
8 number one seal.

9 MR. LYON: Do you have a feel for what pressure
10 would raise the pumps up off the back seat?

11 THE WITNESS: It would be -- it would take several
12 hundred pounds of pressure, PSI's, is my understanding from
13 the training I've had. I'm just talking about the
14 hydraulics of the reactor pump seals. That's why we have a
15 minimum pressure of 325 pounds for starting pumps, to get
16 that hydraulic lift and balance on those seals. It may not
17 take quite that to lift it off the seat but it would be, I
18 think, several hundred pounds of pressure.

19 BY MR. CHAFFEE:

20 Q So did you -- in this outage, I think you're like in
21 day 22 of the outage, 24 or 26 or something like that; up to
22 that point, had you gone into mid-loop, come out of mid-loop
23 and gone back into it again and that's what you were in?

24 A We were in the second mid-loop, yes, sir.

25 Q Okay. And the first mid-loop you went into, how

1 soon did you go into that after the plant shut down?

2 A In the neighborhood of probably five or six days.

3 Q Okay. When you went into mid-loop that time, five
4 or six days after shutdown, what was the reason for going
5 into mid-loop at that point?

6 A Of course, you know, mid-loop condition, we all hate
7 it, you know, but the -- I can't see anyway around it right
8 now. The first time was -- first, you have to drain down
9 below the vessel flange so you can take the vessel head off,
10 you know, the integrated head packages, and move it. At
11 the same time to do our eddy current inspections on our
12 generators to put the nozzle dams in place so we can
13 continue eddy current testing while we're flooded up moving
14 fuel.

15 Q That's what you did, you drained down the mid-loop
16 to take the head off and to put your dams in and then you
17 filled the refueling --

18 A Yes, sir.

19 Q So for that mid-loop you were down just long enough
20 to do those -- to take the head off and put the dams on?

21 A That's correct. Pulling the manways off and putting
22 the nozzle dams in --

23 Q And the seals? Did you do the seals?

24 A And the seal work. It turned out, I believe, the
25 nozzle dam work was scheduled to take the longest and I

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1 believe it did take the longest to get those in. We did do
2 the seal work. We did do that at the same time.

3 Q Is there a reason why you didn't do some work on the
4 electrical buses then?

5 A Let's see, we were doing some diesel testing on one
6 train at that time but we maintained -- you know, since we
7 were doing some diesel testing, we didn't want to do any of
8 the RAT work yet. We wanted to finish the diesel testing.

9 Q That's because you needed the diesel to shift the
10 breakers around to do the RAT work, is that right?

11 A Yes, sir.

12 Q Otherwise you could have done it if you weren't
13 doing the diesel testing?

14 A Yes, sir. We could have -- we probably could have
15 done that up front but we chose to put that off. System
16 operations really -- we didn't real want to change the oil
17 in the RAT but you've got to believe your division people.
18 You know, that's a real inconvenience for us to go on a back
19 feed to tag out a RAT and do all of that. But, you know,
20 there's going to be times where you've just go to do that.
21 They had done some oil analysis -- we had to change the oil
22 out in RAT A in the first outage and they wanted to do both
23 at that time and we told them it was just too much. So
24 again, they felt strongly that we needed to change the oil
25 in RAT B this time, so we did that. They also wanted to

1 take A RAT out to do some testing on it but, you know, we
2 just put our foot down there and said, one is enough, you
3 know.

4 Q I'm sorry, say that again. They wanted to do what?

5 A They wanted to do some -- like dobble testing on the
6 A RAT also if possible during the outage.

7 Q Oh, I see.

8 A They didn't convince us that they needed to do that
9 enough for us to take it out for them. So, you know, it was
10 more of a PM type on the RAT. We feel like, at the most,
11 every other outage should be plenty of testing on RATS. We
12 shouldn't have to do that every outage.

13 Q So in the first outage, you did do work on the A
14 RAT?

15 A Yes, sir. We did the exact same thing to the A RAT
16 that we did this outage on the B RAT.

17 Q Did you also in the first outage do the work on the
18 diesels, the...

19 A We did a real similar inspection.

20 Q Did you also go with the mid-loop ops in the first
21 outage?

22 A Yes, sir.

23 Q Did you do it all together where you had the...

24 A To be honest, I'd have to -- there was nothing to
25 keep us from doing that. I don't know if those pieces fell

1 out that way or not.

2 Q Okay. Did you do work on the reactor pump seals in
3 the first outage?

4 A Yes, sir, the same. We did the other two pumps
5 during the first outage and did that at first mid-loop.

6 MR. DIETZ: Is it possible to find out what the
7 condition of the reactor and systems were during that first
8 outage?

9 THE WITNESS: I think we can look back and probably
10 piece that together.

11 MR. DIETZ: Were you in the same kind of line up
12 then that you were here?

13 THE WITNESS: I think our records would show us
14 that. I know we had the backfeed established and were fed
15 off of one RAT, both buses, and we did the same diesel work
16 but I'll have to look and see what the condition of the RCS
17 was at the time we did those.

18 MR. DIETZ: On the backfeed, when you open up the
19 generator disconnects, that removes the ground detection
20 circuitry off the generator, what do you do, do you put in a
21 new ground detection fault limit --

22 THE WITNESS: I have to check our procedure. I
23 don't think we would hook up any special relaying. You
24 know, we would still have all of the protection on all of
25 the normal switch gear in the plant. We would still have

1 all of the protective circuitry on the unit itself.

2 MR. DIETZ: How about on the main generator?
3 There's a neutral ground -- a transformer and everything, do
4 you move over and put in another connection on the isophase
5 bus?

6 THE WITNESS: To be honest, I'm not sure if we do
7 that or not.

8 MR. DIETZ: Who would we find that from?

9 THE WITNESS: Paul Kochery would probably be a good
10 one to ask that.

11 BY MR. CHAFFEE:

12 Q Are you -- have you passed the necessary RO exam?

13 A Yes, sir.

14 Q Have you been previously on-shift SRO?

15 A Yes, sir.

16 Q How long ago did you go off shift?

17 A I was the shift superintendent for the initial
18 criticality of Unit 1 and on shift for probably close to a
19 year after that, nine months after that, and then I went
20 into the work control superintendent role, and now assuming
21 the acting manager so I was shift for I guess over a year or
22 so in on OS capacity.

23 Q Do you maintain your license current?

24 A Yes, sir.

25 Q Do you have training on operations in the -- midloop

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1 before our first outage, and --

2 MR. LYON: Do you remember the date of your last
3 outage?

4 THE WITNESS: Yes, sir, it was 18 months ago. So
5 what was that? May, '88?

6 MR. LYON: Generic letter hit the street about
7 November of '88. And you had a lot of warning of what was
8 in it by way of the owners' group?

9 THE WITNESS: Yes. And we did in that outage change
10 our plans. We only put nozzles down in two of the four
11 generators. That's all we had planned, but we did make a
12 last minute design change and we pulled the pressurizer
13 manway off and we had a lot of problems with the bolting and
14 we changed that out to studs and nuts realizing we would be
15 doing that frequently. So we did pull that off. We did try
16 to incorporate keeping the thermocouples connected until the
17 time we were ready to pull the head. Those type actions we
18 did pay particular attention to.

19 MR. LYON: You said, if I recall correctly, "We hate
20 mid-loop." Why is that?

21 THE WITNESS: You know, there have been a lot
22 incidents in the industry. It's a very touchy time in an
23 outage, you know. We try to be particularly careful with the
24 work we schedule and from an operations standpoint, it's a
25 place you don't like to be and there's not a lot of margin

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1 for error. When you've got that 23 feet of water above you,
2 you know, there's a lot of margin for error there. But we
3 realize mid-loop is very critical and every time we get
4 through a mid-loop, you know, there's kind of sigh of relief
5 and we feel good about it. I guess it's just everyone's
6 understanding that, hey, while we're at mid-loop everyone
7 needs to be a little easier on Operations and not so
8 demanding and take their time and we all understand that is
9 a very delicate time in the plant.

10 MR. DIETZ: What would happen if one of those nozzle
11 dams let lose while you were in refueling?

12 THE WITNESS: Well, we -- you know, we do have leak
13 detection set up, so hopefully we would -- if it was a
14 slowly developing leak or a gradually increasing leak, you
15 know, we do a visual check as we flood up and stop right
16 above the nozzle dams and the whole time we're flooding up
17 to the level, we do an inspection. We have a leak detection
18 installed in the channel heads but, you know, it would be a
19 bad scenario. We would need to put the -- if we had any
20 fuel hanging, put it in a safe -- put it in a safe
21 condition, whether that be back in the core or in the
22 upender or...

23 MR. DIETZ: Do you have any idea of what kind of
24 flows you would get up through the head or through the steam
25 generator if the dam let lose?

1 THE WITNESS: It would be a lot.

2 (Laughter.)

3 MR. DIETZ: Would you have time to get a bundle
4 where you wanted it?

5 THE WITNESS: Probably in the worst -- you would
6 probably have several -- I would think six or seven minutes
7 hopefully and that should give you time to go either the
8 upender and lower the upender or go to the vessel and set it
9 in the vessel.

10 MR. LYON: Do you think you could move fuel into the
11 core given the flow that would be pouring out through the
12 vessel? I know when you're close to the hot legs for
13 example, sometimes you'll turn off the RHR pumps so that you
14 don't have to work against a piddly 3,000 GPM typically. If
15 you've got this guy with open, it's nothing like 3,000 GPM,
16 it's far above that.

17 THE WITNESS: Yes, sir. I -- it would probably be
18 difficult and it probably -- it's according to how much of
19 the core you had off-loaded. You may have enough room to
20 get it down, you may not be able to get it down, you may not
21 be able to get it on the guide pins but at least you could
22 get it under water there. It's really according -- if it
23 was the first assembly out, you may have trouble getting it
24 back in there. That would be a difficult situation.

25 BY MR. CHAFFEE:

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1 Q The other two fellows, Barlow and D'Amico --

2 A D'Amico.

3 Q -- are they also licensed?

4 A Ricky Barlow is. He was a licensed shift supervisor
5 and Joe was a certified SRO instructor but he has not gone
6 back to get a license. Since we're a recently licensed
7 plant, a lot of us went through the training early on and
8 Joe got out of Operations -- I was a licensed SRO
9 instructor you know, prior to being able to get an SRO
10 license prior to our fuel load and Joe went through that
11 same program but he did not go back and get his license
12 since he was out of Operations. So he's had some training
13 but he has not had the full blown SRO license training.

14 Q Can you explain to us how the three of you work
15 together to -- I guess you guys sort of mastermind the
16 outages, is that correct?

17 A Yes, sir, we do require a lot of department input.
18 You know, we are kind of the controlling assembler of the
19 information and put it out but it requires detailed
20 operations reviews, detailed maintenance reviews and buy-
21 ins. So, we do assemble it. We do keep a resolution item
22 list, so if critical activities come in or we're aware of
23 that we know we've got to take care of, they get on our
24 punch list and we make sure all of those get taken care of.
25 You know, we are ultimately responsible for assembling that

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1 but all of that has a thorough Operations review and buy-in.
2 It just makes it a little easier on them having us do it
3 because we usually avoid big entanglements in the schedule
4 for them.

5 Q Who do you report to?

6 A I report to Skip Kitchens.

7 MR. LYON: Is there a detailed safety review of your
8 outage plan to look for potential safety areas or concerns
9 and identify them?

10 THE WITNESS: I would -- I would say, yes, sir.
11 It's not -- it's not called that specifically but, you know,
12 every manager on site reviews the schedule and everyone is
13 looking for anything that they think is a concern besides
14 their department's responsibility in making sure that they
15 can support that responsibility. You know, we try to avoid
16 any scheduling. You know -- I guess -- you know, we set up
17 system windows for taking systems out of service and we try
18 to make that very consistent so Operations knows, hey, they
19 are working on the A-train, so we've got all of our B-train
20 equipment that we need available. We try to factor items --
21 human factors like that in there.

22 MR. LYON: Is there something equivalent to -- if
23 you want to go in and do a plant mod for example, there will
24 be a safety review, a contrast against the regulations and
25 if this does involve say an unreviewed safety question or

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1 something like that, it's dealt with according. Is there
2 something comparable to that that is conducted here, say the
3 same sorts of people, the same management attention?

4 THE WITNESS: Well, I think instead on incorporating
5 those type things, they are normally incorporated into our
6 plant procedures for actual operation of the plant and those
7 actually are better for maintaining the configuration of the
8 plant because a schedule can get changed. You know, you get
9 a week into the schedule and this piece moves faster and
10 this piece moves slower and you get -- you get a whole
11 different plant configuration than you originally started
12 out with. So we try to factor those type requirements into
13 our operations procedures to make sure that --

14 MR. LYON: Excuse me. By operations procedures, do
15 you mean the procedures in the Control Room that the
16 operators follow?

17 THE WITNESS: Yes, sir. Like our unit operating
18 procedures. If they get put in those procedures, required
19 conditions, then there is no way we can schedule them
20 differently.

21 MR. LYON: Okay, so those operations procedures
22 provide assurances that certain minimum equipment will be
23 available?

24 THE WITNESS: Yes, sir.

25 MR. LYON: Would they, for example, require two

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1 diesels for two RHR systems?

2 THE WITNESS: They would require two RHR systems.

3 MR. LYON: But n ' necessarily two diesels?

4 THE WITNESS: No, sir.

5 MR. LYON: Would they address certain minimum off-
6 site power requirements in conjunction with certain diesel
7 combinations?

8 THE WITNESS: If we had additional requirements like
9 that, yes, sir. But, you know, presently those have not
10 been interpreted as a requirement. Having two RHR trains
11 does not necessarily constitute having both diesels operable
12 or both off-site power sources operable.

13 MR. LYON: All right. So -- I guess where I'm
14 headed is -- well, let me give you a specific example. If I
15 were shutdown for several days and I had had an extended
16 full-power run, is there anything there that says, well,
17 it's okay to take on diesel out and tear it apart for
18 maintenance while I'm at mid-loop? Am I prevented from
19 doing that in any way?

20 THE WITNESS: We're prevented from starting
21 refueling operations for 100 hours --

22 MR. LYON: I understand that.

23 THE WITNESS: -- and we are prevented from taking
24 diesels or RATS out prior to entering Mode 5.

25 MR. LYON: I understand that, too.

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MR. DIETZ: Those are in tech specs?

THE WITNESS: Those are in tech specs.

MR. DIETZ: Are there any administrative restraints on how you can schedule things?

MR. LYON: Excuse me for getting ahead, but could we take my question first?

THE WITNESS: Repeat it again.

MR. LYON: I'm not sure I can but I'll try.

(Laughter.)

MR. LYON: Is there anything that would prevent you from taking out two diesels a few days after an extended full power run and entering mid-loop with two diesels out or taking the two diesels out while you were in that mid-loop?

THE WITNESS: Well...

MR. LYON: Taking one of your two diesels out. Sorry about that.

THE WITNESS: No, sir, there's nothing to prevent us from doing that.

MR. LYON: Okay. Go ahead.

MR. DIETZ: Are there any administrative constraints on scheduling besides the tech spec -- I mean the incorporation of tech specs under the schedule?

THE WITNESS: You know, the unit operating procedures, we -- you know, we insure that our schedule doesn't conflict with the UOP requirements, which a lot of

1 them -- the generic requirements in our tech specs came from
2 the generic letter are in UOP's. They put them in there to
3 make sure they have them. Like hooking up the thermocouples
4 or requiring certain size vent paths during nozzle dam
5 installation. All of that are in the UOP's and all of those
6 are considered in the schedule.

7 MR. DIETZ: Do you put any of those constraints in
8 the work package also, so that when you go to the control
9 room those constraints are clearly visible?

10 THE WITNESS: Yes, sir. If they are identified,
11 they certainly are. We do a lot of coding on our work
12 orders that say this inops the B diesel or this requires
13 mid-loop to perform this work. So after we do our
14 operations review, we will write all of those requirements
15 on there and write any tech specs affected. When the SS
16 gets in the control room, he can usually look at it and tell
17 exactly what his conditions need to be and what it does to
18 him. So, I feel comfortable that we do identify that type
19 of information on all of these work packages.

20 MR. DIETZ: Has anyone looked at the outage in terms
21 of the risk in all of the different, you know, systems you
22 have and the abilities you have to take them out, and looked
23 at that in terms of possibly the fact that maybe tech specs
24 can allow you to get into a situation that's maybe riskier
25 than we should really be?

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1 THE WITNESS: I can tell you that some of the
2 reviews that we did were -- we had a plot that had all of
3 our systems on them, all of our -- all of the systems in the
4 plant and they showed the scheduled time for it to be tagged
5 out and returned to service. And looking -- you know, we
6 did review that very carefully, to look at how those
7 interrelated to each other, to make sure that we always had
8 an SI pump available and a flow path to the hot loads
9 whenever nozzle dams were installed. But also, just even
10 the minor impacts. Make sure we had a blowdown system not
11 tagged out when we were ready to drain the steam generator.
12 So, we looked at how all of these system tag-outs affected
13 the actual schedule or interplayed with the other system
14 tag-outs on the schedule. So we -- I think that's similar
15 to what you're asking for, maybe not exactly.

16 MR. CHAFFEE: What I was -- before I left, what I
17 was trying to do was establish how you guys worked together.
18 What I was leading to, I was thinking we were probably
19 getting to the point where we ought to just have the other
20 two people come in and continue this dialogue because I
21 think where we're at is in the area of scheduling and stuff.
22 It sounds like we want to see how you guys work as a team, I
23 think.

24 We can go off the record here.

25 (A short recess was taken.)

1 MR. CHAFFEE: All right, go ahead.

2 MR. LYON: We were talking earlier about the met
3 tower and the ability to get data over to the EOF. Would
4 you comment further on communications on that and the
5 transfer of information to the EOF?

6 THE WITNESS: Yes, sir. Normally, we get that
7 information right off an ERF terminal. Just like terminals
8 in the control room, there are terminals in the TSC and we
9 have those in the EOF. However, that information wasn't
10 available over the ERF line, so the field monitoring teams
11 were actually dispatched to the met tower itself and read
12 those -- read that information locally and transmitted it
13 back to us in the EOF through the radio, through the radio
14 channels.

15 MR. LYON: And you were then in contact with the
16 Tech Support Center and could transfer that same information
17 to them. Could they also get it by radio from the met
18 tower?

19 THE WITNESS: I don't believe they have radios
20 there. We control the field monitoring teams out of EOF but
21 our Dose Assessment Manager is in close communication with
22 the TSC and the HP -- HP personnel and the TSC.

23 MR. LYON: Okay. Thank you.

24 MR. CHAFFEE: Let's go off the record.

25 (Whereupon, the interview was concluded at 5:00.)

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C E R T I F I C A T E

This is to certify that the attached proceedings before the
U. S. Nuclear Regulatory Commission in the matter of:

Name: Interview of MICHAEL BRIAN LACKEY

Docket Number:

Place: Vogtle Nuclear Generating Plant, Waynesboro, GA

Date: March 27, 1990

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

William L. Warren

WILLIAM L. WARREN
Official Reporter

Ann Riley & Associates

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