16-2a

INTERVIEW OF:

MR. JOHN HOPKINS

SHIFT SUPERINTENDENT/PLANT VOGTLE

MARCH 26, 1990, 1:22 P.M.

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PROCEEDINGS

MR. ALFRED CHAFFEE: It is March 26th at 1:22 in the afternoon, and this is the IIT for Vogtle and we're here to interview -- what's your name?

EXAMINATION

BY MR. ALFRED CHAFFEE

A. John Hopkins.

Q. John Hopkins. And John, what's your position?

A. I'm a shift superintendent.

Q. And the shift superintendent is the person who has overall responsibility for both units?

A. That's correct.

Q. So you're an SRO licensed individual?

A. Uh-huh (yes).

Q. Would you just take us through the event that happened on -- I guess it was March 20th, a Tuesday, is that right?

A. It was Tuesday, I don't recall the date.

Q. Just take us through, you know, what the plant was like initially and then what happened.

A. Okay, Unit Two was at a hundred percent power; Unit One was mid-loop. We had -- were in mode five mid-loop. The chronological order -- as I told the AIT, I can't, you know -- the chronological order, I don't remember. It's all written down.

I was in the Unit One control room when the event occurred. I saw the lights go out; I heard somebody say the diesel had started. When the diesel tied the lights came back on full bright, so I knew that had tied. I was making my way to the common area between the two control rooms -- we call that the tower -- to check on Unit Two, because a page announcement said Unit Two had tripped. I made a quick look at Unit Two, informed the shift supervisor that he had lost one of his reserve auxiliary transformers; he was unaware he'd lost power on one of his transformers. Unit Two tripped, appeared to be normal. There was a rather large cool down initially, which was unexpected. The shift supervisor for Unit Two ordered steam line isolation to terminate the cool down, and it did.

I stepped back to -- or turned back to Unit One and the diesel had tripped. Mr. Keith Pope was dispatched to the sequencer panel in the control building down on A level. He went down to the control room -- excuse me, to the sequencer, called back and said the sequencer had locked up, he was going to reset it. I don't recall who was talking to Keith from the control room. Keith reset the sequencer; when he did, we saw the diesel restart, it came up to speed. When it was at speed, it tied, all the lights came back on.

Just a very short period of time, the diesel tripped again. This time I was looking at the enunciator panel for the

diesel. I saw the low jacket water pressure trip below again. About this time Keith came back in the control room; John Acree was in the control room -- he's a SRO also. Someone suggested locally emergency starting the diesel. I told Mr. Acree, I said, "John, you go out to the diesel, you get on the headsets. We will emergency start the diesel. You're to monitor the jacket water pressure in particular but, you know, watch all the parameters. Report what jacket water pressure is when it starts," because the jacket water pressure trip is bypassed on emergency start. "If the pressure is low, then we'll determine whether we're going to run the diesel and possibly damage it or turn it off."

Also during all of this with the diesel I directed -- Steve Chestnut, who's a recently licensed SRO, to take whatever action was required to get containment clothes, the equipment hatch shut and the air lock closed, and Steve left the control room. Mike Lackey, who's the manager of outages and planning, was in the control room. Mike spoke to me and said that he could get all the mid-loop work -- all the openings we'd made closed. There were -- Tuesday morning there were two steam generators that had the primary man ways installed and two that didn't, at this time in the morning, which was a couple of hours later. I don't know, you know, how far along they had advanced on the steam generators. And there was an accumulator check valve that had the bonnet removed. I said, "Mike, yeah,

you go get the mid-loop work bottled up," is the words I used, and Mike left the control room.

When we finally got the diesel started back up -- oh, excuse me, one more thing I -- Mr. Dave Vineyard, he was in the control room, and right when this first started happening, you know, we realized we'd lost power, my immediate concern on Unit One was core heat up at mid-loop. We had had the thermocouples connected up very early Tuesday morning, had two in core thermocouples and they were reading on Proteus. I directed David to Proteus.

Q. I'm sorry, what does "on Proteus" mean?

A. The plant computer. I told Vineyard to watch the thermocouples. Initially they were ninety or a hundred degrees or something, and he was frequently calling out core exit temperature. When Acree got out to the diesel, he called us before he did anything. I don't recall who the operator in the control room was on the headsets with him. We put all the pumps on that diesel into the pull locked position so they wouldn't auto start; we wanted to control the loading of the diesel. The diesel started, we closed in the motor control centers -- which that had to be done for the NSCW pump valves. They have a certain sequence they follow on loss of power signal.

After we got the motor control centers all re-energized, all the lights came on then, we started two NSCW

pumps, two CCW pumps and the -- I guess it's the ARHR pump. Once we got it started, we saw in core temperatures coming down. Somewhere in all this -- I mean, this is forty minutes, it seemed like just a couple of minutes to me -- it was a very short period of time, I directed someone to swap the breakers for the -- this all runs together after I've said it a few times -- I had -- well, I had two options of getting power back. The "A" RAT was essentially out of commission, we knew that right away. Mike Lackey had told us when he came in that a truck had backed into the tower and knocked it down. The work on the "B" RAT Mike said was finished, we can get them off the clearance, so I assigned two licensed operators -- Hans Bishop was one, I don't recall who the other was -- to take the clearance and get it restored such that we could get power from the "B" RAT. That normally feeds the B emergency switch gear, BAO three, and by swapping a breaker in the "A" switch gear, we can supply it from the "B" RAT. The concern on that was the BRHR pump had an abnormally high vibration; not a destructive type vibration but it was much higher than we had experienced in the past and we didn't want to run it unless we had to.

Q. But it was still considered operable, right?

A. Yes, yes, it was, and we fired it up and it ran. We got the -- energized the B transformer, energized the "B" RAT; at this time the "B" RAT -- BAO 3 -- at this time BAO 3 bus was energized via the RAT and "A" AO2 was energized by the diesel.

We had --

Q. Wait a second, let me catch up with you. Say that again, you had -- I'm losing it.

A. We had BAO 3 switch gear, the B switch gear energized from the "B" RAT, and the A switch gear was energized from the diesel, still running in emergency mode.

Q. From the A diesel, okay.

A. That's correct.

Q. Oh, I see, originally when you got the A diesel started, you only got the A --

A. Only got the A bus back, that's correct, had no B train power.

Q. Oh, I see. And what you were trying to do is get the B bus up so you could start the BRHR pump 'cause that was the --

A. Yes, uh-huh, yes.

Q. Even though the ARHR pump was the pump of preference.

A. That's correct. The reason behind that was we had emergency started the diesel, which removes over half the treads on the diesel, half the protective circuits. And from the two trips prior to the emergency start, we thought there might be a problem with the diesel and, you know, didn't want to sacrifice the diesel at this time when I had other power sources available.

Q. Oh, I see, so you were setting it up so you could get

onto the RRHR pump. That's what you were trying to do?

A. Sort of.

Q. Sort of?

A. I'll get to that. We got the B bus hot from the RAT and the A bus is hot from the diesel. There is installed equipment which requires swapping one 4160 volt breaker, physically moving the breaker to a different frame where we can energize both ESF buses from either RAT. We directed -- I told somebody to go get the breakers rolled -- we call that rolling the breakers -- so I could energize the A 4160 bus from the B RAT.

At this time I was in communication with Skip Kitchens in the TSC, he's the TSC manager; I told him, you know, that we had the B RAT and the B 4160 hot. It was our intentions to parallel the diesel to the B RAT via the -- it's called the alternate power, I think is what -- is the breaker term. The people in the TSC talked about it a while and Skip called me back and said, you know, "Yes, that's what we want to do and we've got a sequence we'd like to do it in"; I said, "Okay." The sequence they wanted to use was start the BRHR pump, not trip the ARHR pump, but back it out of service to where it was on minimum flow. So we started the BRHR pump, and as we were bringing B in service we were backing A out, only had one flow path available. The other flow path was tagged out for some work.

Q. "Flow path," you mean RHR?

A. Flow path from RHR, shut down coolant RHR. We got an ARHR running on minimum flow, then we just, you know, after -- that was the prereq for paralleling to the transformer on the A switch gear. That's what the TSC recommended and I think it was a good idea.

Q. Can you tell me why? Something to --

A. We didn't want to take the chance of having -- of losing RHR again, is what it amounted to. When we were paralleling the diesel to the off site source, which is not a normal occurrence, the possibility of a breaker failure, or even an error, an operator error, was such that could have tripped the diesel and the breaker we were trying to close and we would have been left with no power again, and once a day's enough, trust me. So that's why we picked that sequence. After we got the ARHR on minimum flow, we paralleled the switch gear to the transformer and shut down the diesel, or reset from emergency start and did a normal shutdown on the diesel.

After we got the diesel shut down, we put ARHR in service as we backed B out because of the concerns with the high vibration. And once B was out of service, we turned it off.

Q. You got any more you want to tell us?

A. I have to apologize for the order here. Everything happened very, very fast.

Q. When all of this was beginning to happen in the control room and you had Unit Two tripping, and I guess you said there were some unusual things that were going on over there and then you also had this problem in Unit One with the diesel -- basically no power to your vital buses, what was going through your mind in terms of concerns from a nuclear safety standpoint? I mean --

A. Well, initially, when this initially -- one of the first indication that I had was the lights went out. The diesel started, I heard somebody -- I assume it was an operator, you know -- say "The diesel has started," and I -- any time any situation -- I mean, whether -- I mean, nothing of this magnitude, but I mean anything happens, my first reaction is to go to the tower area where I can -- 'cause I can see much better, I can see what's going on, I can analyze what's happening.

I stepped into the tower, I was just a few feet from it, and I heard Unit Two had tripped. Well, I knew the diesel was running and the lights came on, so I knew Unit Two -- Unit One, excuse me, was in good shape. The operators immediately called out, you know, "We've lost RHR," which, you know, is expected, so I knew that they were aware that RHR had gone away and, you know, they would take actions to restore RHR. Since Unit One was getting better and the actions being taken were what I would have directed if I'd have, you know,

concentrated on Unit One, I went to check Unit Two, which is -- you know, we had this large cool down and about a lowest pressure was 1956, I think, on Unit Two, so a three hundred pound, a pretty rapid pressure drop.

Q. Why did that happen?

A. I do not know. I was -- on Unit Two -- I was more concerned about Unit Two, because Unit One had taken care of itself, as far as the power requirements were concerned, with the diesel starting. While I was still on the tower, I could hear the operators and the supervisor talking about the loss of pressure and the cool down. The shift supervisor ordered the steam line isolation which, I mean, that's what you do, and it stopped the cool down depressurization. I told him that the RAT was tripped, he didn't have it. I told him to dispatch someone to his B diesel that was up and running to, you know, check it out and make sure it was okay and to monitor it while it was running. Then the Unit One diesel tripped again, so my attention became focused on Unit One. Unit Two was essentially stable, mode three, normal post-trip now. My concern for Unit One was the loss of shutdown coolant. We had openings in the primary, we had an opening in containment, and no method for cooling the plant at the time. My first thoughts were get power, get containment bottled up and get the primary bottle back up. And, you know, we addressed those within a matter of seconds.

Q. Do you have any feeling for if you hadn't gotten power back what would have transpired, if you hadn't replaced RHR? Do you have any feeling for that?

A. I'm not going to quote his numbers here, but if we had not gotten RHR back -- you want me to assume that nothing else happened either about the containment or primary system?

Q. I guess. I guess I'm trying to get a feeling of what was going through your mind in terms of, "How much time do I have to deal with this thing?" Is it a race between getting these things buttoned up or --

A. No, it's not a race, not -- you know, what's normally thought of as a race. I mean, the newspapers even say we had twenty-four hours. I wouldn't have guessed twenty-four hours, but I knew there was no --

Q. It wasn't immediate?

A. You know, I knew I had more than twenty or thirty minutes. I knew I had, you know, a substantial amount of time. In my mind, I was already thinking about running power from Plant Wilson, just dragging the cable over, you know, if we had to. That thought had crossed my mind, if the diesel was in such a condition where it would not run.

Q. Have you guys ever done any type of training in your training organization where you've looked at being in the kind of configuration you guys were in when you, you know, you had no containment, you had no RCS, lost all this stuff and you're

in the loop operation, and lo and behold, you lose shutdown coolant and for some reason you can't get it back? Have they ever talked about that type of a scenario?

A. In training -- I believe it was the latter part of 1989, or it might have been the first part of 1990, I'm not real sure -- we ran some mid-lube scenarios with loss of RHR due to vortexing, air binding. Our training department's very good about looking at -- or exposing us to industry events, especially since, you know, we're coming up on a refueling outage which was, you know, public knowledge. We wanted to, you know, go through -- we ran the scenario and tried to make the system lose suction by running it mid-lube and raising flow to the point where we could see it, lowering level to the point where we could see it, to get an idea of --Q.Oh, in a simulator?

A. Yes, in a simulator -- you know, what to look for. And when we saw something, you know, what it could mean, the -- looking at losing RHR, you know, due to a loss of power, we may have talked about that. You know, I don't recall.

Q. Have you had any problems here at Vogtle with loss of shutdown cooling in the past?

A. Not that I know of.

Q. Have you had any problems with the loss of the vital buses?

A. We had -- God, incident's a bad word --

Q. Event, event.

A. -- but I'll use incident -- event, okay. We had an event on Unit Two where we were transferring power -- Unit Two was up, running a hundred percent; we transferred power from our normal station loads, the turbine building switch gear in AO 1 and 4 and in AO 5 and aux building. We were going to transfer those three switch gear from the RAT to the UAT where they're normally designed to be; we've never done that before, because there's some relaying type -- known relaying problems. We were told that the relays had been fixed and, you know, they wanted us to transfer to the normal power supply. I just happened to be on shift and when they came up and wanted to do it and I was fixing to get off, it was right at turnover time, and I said, "No, we'll wait and let the night shift do it." I explained it to the Shift Superintendent, Dudley Carter, you know, "This is what they wanted to do, I didn't do it 'cause it was too late," you know, "If you want to do it, I'll stay and help and if anything does happen to happen, I'll be here." And when he did it the RAT tripped, some more relay problems.

Q. So was there a relay problem -- and this is on Unit Two?

A. Unit Two.

Q. Tell me one more time, make sure I understand. Did the RAT trip because the relay -- there were some relays that --

A. On the other one?

Q. On Unit Two. It was just --

A. Are you talking about what happened Tuesday or what happened a couple of months ago?

Q. Couple of months ago. There were relays --

A. It was a relay problem, I believe, yes.

MR. CHAFFEE: Does anybody have any other questions? Go ahead.

MR. LAZARUS: I want you to go back in a few minutes and put on your ED hat and go through that scenario, but I have some diesel questions also. Do you want to go with the diesel questions first?

MR. CHAFFEE: Sure.

MR. LAZARUS: The first thing I wanted to do was make sure I understood who was in the control room and who was in the various places. Now, you said Keith Pope was dispatched to the control building and he was working with the sequencer trying to get that back?

MR. HOPKINS: That's correct.

MR. LAZARUS: And John Acree --

MR. HOPKINS: Acree.

MR. LAZARUS: Acree was sent down to the diesel generator room to perform the break glass start?

MR. HOPKINS: Right, he had two or three PEOs with him: Slim Whitman, Dwayne DeLoach and George Oates.

MR. LAZARUS: Was there any communication between the control room and the diesel room?

MR. HOPKINS: Headsets.

MR. LAZARUS: Prior to the time that John went down --

MR. HOPKINS: Prior to -- no, not prior to, I don't think. I'm not aware of any.

MR. KENDAL: I wanted to ask a question regarding the other options you were considering if you could not have gotten the diesel generator 1A back or if it had tripped or whatever. You mentioned something about considering running power over from another plant with a cable?

MR. HOPKINS: Right, the CT's right behind us here.

MR. CHAFFEE: How long a distance of cable are you talking about? Hundreds of feet, or is it a preexisting cable or --

MR. HOPKINS: It's -- no, it's more than hundreds of feet.

MR. CHAFFEE: Thousands of feet?

MR. HOPKINS: I'd say thousands.

MR. CHAFFEE: Oh, I see. So all the way from that plant way over there over here.

MR. HOPKINS: Uh-huh (yes). The little CTs over here.

MR. CHAFFEE: Do they have that cable available or --

MR. WYCKOFF: What are the CT's?

MR. HOPKINS: Combustion turbines. They're about -- there's five, I think, and about thirty-five megawatts apiece. I don't understand -- do they have that capability? I don't understand what you . . .

MR. CHAFFEE: When you say you're going to run cable over here, I guess you're saying that you have some -- you've got some cable you can run over here or --

MR. HOPKINS: I'm sure we could get it.

MR. DIETZ: So that is a physically viable alternative?

MR. HOPKINS: Yes. During construction that's where our power came from. There was an overnead line that came up, a 13.8 line. There's a small switch on it.

MR. CHAFFEE: Oh, so the reason we're asking is, you're not proposing they lay cable across the ground here, you're saying they probably could use the --

MR. HOPKINS: Yeah, if that's what it took, uh-huh.

MR. CHAFFEE: Okay, well, I don't know much about this, but a thirteen foot --

MR. HOPKINS: Any port in a storm, I mean, we'd just block the road off, you know, until we could come up

with something else. I mean, that's just -- that's one of the things I thought of.

MR. CHAFFEE: Okay, I understand. Okay, you thought of that -- anyway I can get power, so one way would be to get some power over there somehow.

MR. HOPKINS: That's one way to get power. The other way, which --

MR. CHAFFEE: It wasn't that you -- it wasn't that there was already a pre-planned alternate method, was that, that was all set in place?

MR. HOPKINS: Not to my knowledge it's not.

MR. CHAFFEE: You were just thinking -- okay, well, you were just thinking well, maybe if everything else failed, we can get some cable --

MR. HOPKINS: If worse came to worst, you know, that is a valid option. The other option we had was -- depending on the status of the work on the B transformer, which it -- you know, they have to be through. You know, that was the other option, and that's what we used.

MR. KENDAL: Who was the person that would be good to talk to with regard to removing the clearances on the B transformer?

MR. HOPKINS: As to who physically did it? I think his name's Hans Bishop. I'm sure that's who went out and did it. There was a supervisor that I, you know, made

responsible for it and he was pursuing it with Hans, but I don't recall who that was.

MR. KENDAL: With regard to getting power back to -- or potential options for getting power over to the train A switch gear, was there consideration being given to either bringing power over from Unit Two via one of the common buses or from going -- back feeding through the main transformer of the UATs and then somehow over to the A switch gear?

MR. HOPKINS: I didn't think of those options.

MR. KENDAL: Do you know whether it was being considered at the time or --

MR. HOPKINS: I have no idea. If I had suggested running the line on the ground, you know, from Wilson, somebody would have said, you know, "Hey, we've got it right here, we can run that." You know, that's what we would have done.

MR. KENDAL: Have you ever defeated those interlocks and run power from the unit auxiliary transformer to the safety bus? Has it ever been done on the site?

MR. HOPKINS: Not that I know of. That would require, you know, running cable down the hallway. There's no installed way of doing that. The emergency buses cannot physically be fed from the unit auxiliary transformers. It would require, you know, running cable somewhere.

MR. WYCKOFF: It looks -- I just asked --

MR. WYCKOFF drew a diagram on board.

MR. HOPKINS: That's it right there.

MR. WYCKOFF: Looks like you can get to there and you can get to there.

MR. HOPKINS: Okay. Well, you know, we might could have done that. It would have been extremely -- or as extremely abnormal as what I was suggesting, yeah. I'll remember that, though.

MR. CHAFFEE: But I guess what you're also saying is you guys were pretty -- things were happening very fast and you guys were --

MR. HOPKINS: Yes.

MR. CHAFFEE: -- basically focused on getting these diesels back on, and if you had -- sounds like what's fair is if you had not been able to get the diesel back on, perhaps some of these things we're talking about would have gotten pursued by the group that was involved?

MR. HOPKINS: Yes, uh-huh. You know, if we'd have seen the --

MR. CHAFFEE: We're not trying to make out that you guys aren't capable of coming up with these, we're just -- I'm trying to recognize, I think, what you're telling us.

MR. HOPKINS: I mean, we essentially split our

resources into two. One was to get the diesel back and the other was to get the other transformer energized.

MR. CHAFFEE: And what the team is just trying to pursue is what are some other alternatives, not whether you guys thought of them at the time or not.

MR. HOPKINS: That -- that is another alternative.

MR. CHAFFEE: And I guess what our understanding, though, is --

MR. HOPKINS: Up until now I've never thought of it but, you know, that would be a good real way. That would be simple.

MR. KENDAL: It may not be as simple as you think.

MR. HOPKINS: Oh, I mean, it'd be a lot simpler than what I thought of.

MR. CHAFFEE: But I guess what's also true is I think it's our understanding -- I don't know if it's valid or true or not, but there's some interlocks that prevents you from doing that sort of thing?

MR. HOPKINS: Yes, uh-huh, oh, yes, uh-huh. It would require some INC work, electrical work.

MR. WYCKOFF: Now, we're not sure, by the way -- just so we're not leading you astray, we're not sure that those breakers would handle the charging current on the big

transformer that would also get energized, so we do not know that's a valid route. We just wondered -- I'm trying to learn whether the plant has thought of it. We don't know that that will work, so it's --

MR. CHAFFEE: Sounds like what's true, though, is what you're telling us is that, in the kind of scenario you found yourself in, you haven't had a lot of training or discussion about various options that might be available to try to deal with it, other than get the diesel back. You guys haven't strategized this in your training sessions and stuff. I can kind of tell that from --

MR. HOPKINS: Yes, uh-huh.

MR. CHAFFEE: -- you know, 'cause we're all sort of strategizing right now trying to come up with something.

MR. FRAZER: This was actually -- you had training in both the loss of RHR in mid-loop, and then loss of power, but not the combination of both, right?

MR. HOPKINS: That's correct.

MR. FRAZER: So this was kind of unique and I guess getting into --

MR. HOPKINS: We go through loss of power scenarios on a frequent basis.

MR. DIETZ: Are those from power conditions?

MR. HOPKINS: From power, yes.

MR. DIETZ: Okay, not shutdown condition?

MR. HOPKINS: Not mid-loop.

MR. DIETZ: Not mid-loop. How useful were your procedures, emergency procedures, abnormal procedures, in helping you with this event?

MR. HOPKINS: I told them Friday, we were in -- I didn't mean that to sound bad, don't get me wrong -- basically there is currently -- or as of Tuesday, there was no one procedure that applied. I mean, we realized that real quick. We pulled out the loss of power procedure and the loss of RHR procedure, which addresses mid-loop, and we kind of had to pick and choose the parts that we needed to, you know, restore.

MR. DIETZ: Have you got the procedures that deal with the other accident conditions at a shutdown that you can get into; dilutions --

MR. HOPKINS: Yes, sir.

MR. DIETZ: Are those, again, all individual procedures you do? Do you attempt --

MR. HOPKINS: They don't -- they don't take into consideration losing power, I don't believe.

MR. DIETZ: It's not integrated like the EOPs for power operation?

MR. HOPKINS: They've not been developed at that depth, no, sir. I think that's a fair statement to say.

MR. DIETZ: Would it help to have a set of those developed about that?

MR. HOPKINS: This is the trick question I was telling you about. The only answer I can say is yes. If I say no, you know --

MR. DIETZ: Well, no, I didn't mean to trick you.

MR. HOPKINS: Somebody's going to fire me.

MR. DIETZ: No, it's not --

MR. HOPKINS: Yeah, uh-huh -- but would it help? Yes. We talked about Friday the probability of this occurring is so small, it's -- you know, it's not even worth thinking about hardly, which is why the NRC has not come up with some, you know, specific guidelines for loss of power at mid-loop like they have for, you know, loss of RHR at mid-loop due to the air bind.

MR. CHAFFEE: But I'm not sure that the probability of it occurring is that small. I used to think what you're saying, but in reading things of late, I'm beginning to realize that there has been a lot of events that have happened over the past ten or eleven years where plants have lost shutdown cooling because they've lost the vital buses that are pulling power there, interestingly enough, so anyways -- let me ask this question: After having been through this, before everybody's interviewed and stuff, had the thought

occurred to you on your own that perhaps some sort of procedures that focused on events in an occurring shutdown might be a help to yourself, or had that --

MR. HOPKINS: That -- I'd never -- I'd never thought of it.

MR. CHAFFEE: Had you ever considered that a truck could have blacked out the 1 A ramp?

MR. HOPKINS: I mean, I've -- you know, I'm sure I've thought it was possible, but whether I thought it would happen, I wasn't --

MR. CHAFFEE: Did you become aware that the truck was in that area, or do you know if it was in control at this --

MR. HOPKINS: I did not know that the truck was in the area; I don't think the control room knew.

MR. CHAFFEE: Is that proper? Is that -- I mean, do they go on their own? Is that something the control room would know, or --

MR. HOPKINS: I don't think that's something the control room would have known, not at that time.

MR. CHAFFEE: How is that activity controlled? To what extent does it need to be controlled?

MR. HOPKINS: I don't know.

MR. CHAFFEE: Security doesn't control it, or --

MR. HOPKINS: Well, a security officer with him, as an escort for the non-designated vehicle, but I don't know the answer to your question.

MR. FRAZER: When we spoke last Friday about this same thing, you talked about strengths and weaknesses, things that might include the operator's performance during this time, and at the time I remember you mentioned the mid-loop instrumentation resistance school that was helpful?

MR. HOPKINS: Yes, sir.

MR. FRAZER: Similarly, that unless -- the telephone system was kind of detrimental in this case, that you hadn't prepared for it?

MR. HOPKINS: Well, we -- that's not exactly true. During the construction phase, it was not uncommon, due to an error, to lose one of the vital trains. We even did testing on it where we would lose the -- at that time the control room telephones came only from B train. We lost power one day and we realized we nad to have some backup method of powering the telephones, so the answer -- and it was a wonderful answer at the time -- was install the capability where we could power it from A train, because, you know, we knew all along we'd never lose both. So -- I mean, you know.

MR. CHAFFEE: Can't plan for everything.

MR. KENDAL: I had another question on the diesel. You mentioned that John Acree was sent down to

emergency start the 1 A diesel and to monitor jacket water pressure. Why was he asked to monitor jacket water pressure?

MR. HOPKINS: The first time the diesel tripped, there was no -- or nobody in the control room knew exactly why it tripped. There were a number of alarms that came in the windows. The second time -- I mean I, myself, saw the low jacket water pressure trip alarm before several others came in, and some of the operators saw the low jacket water pressure. From where I was standing I couldn't read it, but I knew which window it was and somebody said it was low jacket water, and I walked down and looked at the window that I had seen flashing and I said, "Yes, it is jacket water." So we thought that there was a problem with either the switch or the engine driven jacket water pump and, you know, that's why I wanted to watch it.

MR. CHAFFEE: So it was low water jacket temperature?

MR. HOPKINS: Pressure.

MR. CHAFFEE: Pressure.

MR. KENDAL: Were there other alarms that came in also?

MR. HOPKINS: Yes, but I don't know what they were.

MR. CHAFFEE: This was on the first trip?

MR. HOPKINS: This was on -- on the second

trip -- on the first trip when they came in, you know, we don't know if one came in and then the rest, but I mean they just -- we looked up and there were numerous alarms. On the second one, I mean, I was looking, I just happened to be looking at the panel, and I saw the window light up and --

MR. CHAFFEE: Just that one, or it and many others?

MR. HOPKINS: That, and then several others. They came in right behind it. And somebody said, "Low jacket water pressure," so I walked down to look to read the window that I had seen first, that's the one I had seen.

MR. CHAFFEE: Oh, so it sounds like people were sort of being more sensitive to the diesel, and when the panel lit up, they were -- which was the first one in was people reacting -- oh, okay.

MR. KENDAL: Does the enunciator for the diesel have any type of -- I guess I'll use the term -- I don't know if this is correct from a human factor standpoint -- but first out capabilities, so that you could tell what the actual --

MR. HOPKINS: That's the correct term, but no, it doesn't.

MR. KENDAL: It does not?

MR. CHAFFEE: That is, it --

MR. HOPKINS: Not in the control room.

MR. CHAFFEE: Not in the control room. Does it exist any place?

MR. HOPKINS: Yeah, for the RAT trip, RAT trip and the --

MR. CHAFFEE: Does it exist any place for the diesel?

MR. HOPKINS: I don't know.

MR. WEST: Would John in the diesel room, would he have the same indication on his annunciator panel --

MR. HOPKINS: Yes, uh-huh.

MR. WEST: -- there that you did relative to the diesel -- all right. You were communicating directly with --

MR. HOPKINS: Not myself, no.

MR. WEST: You were communicating with him through someone else in the control room?

MR. HOPKINS: Through an operator, yeah.

MR. WEST: Same thing for Keith Pope in the sequencer?

MR. HOPKINS: When Keith called from the sequencer, yeah, he was communicating directly with the control room, not myself.

MR. TRAGER: With Kyle Jones?

MR. HOPKINS: Kyle was involved with the diesel. I don't know if he talked to -- you know, if he was

talking to Keith and John or not, but I know somebody was. When the diesel was running Kyle was on the headsets, I do know that, later.

MR. FRAZER: The safety parameter display system for Unit One and the two minute warning for Unit One, was that available at the point that you lost power for Unit One?

MR. HOPKINS: I don't recall.

MR. FRAZER: Do you have any sense of whether the safety parameters display system was of any help either during or after the RHR trips on One and Two?

MR. HOPKINS: Personally, I don't know if it was. I mean, it could have been from, you know, trending thermocouples.

MR. TRAGER: Yeah, that's what I was thinking. Did you have any -- were you viewing any trend movement in your --

MR. HOPKINS: Manual, uh-huh. I think David Vineyard was manually writing them down.

MR. WEST: Did you find that the difference in time, the central system time versus the Eastern Standard Time, had any impact, the fact of it, on the event?

MR. HOPKINS: Not on the event itself, more in the emergency plan notifications. It gets confusing to the communicators -- which I guess I'm talking for them now -- gets

-- you know, as to which time goes where. If you make a mistake, there's an hour -- you're off by an hour.

MR. WEST: One other question. I'm thinking of the shift technical advisor, I haven't heard his name or her name --

MR. HOPKINS: The shift technical advisor is not a shift position, it's a function.

MR. WEST: It's not a dual role position where you --

MR. HOPKINS: It is a dual role. I don't recall who the STA was. Bruce might have been, you know, the STA function, or Clay Christianson in C&T, I don't recall. That would be in the log book, though.

MR. WEST: Is that the configuration for all your shifts, you have this dual role individual --

MR. HOPKINS: That's correct.

MR. WEST: Change that to BOP?

MR. HOPKINS: Yes, sir, that's correct.

MR. TRAGER: You were very satisfied with the way the plant responded to this event?

MR. HOPKINS: Yes, that's true.

MR. FRAZER: And also happy that you happened to have as many people on site as you did, and I guess --

MR. HOPKINS: That -- yeah.

MR. FRAZER: And I guess that it was a good

time of the day for this to be happening. Just to point it out that it was -- I think it was an opportune time, if you were going to have a situation like this, to have it happen at 9:20 in the morning --

MR. HOPKINS: We had a tremendous amount of knowledgeable people around, yeah, that's very good.

MR. CHAFFEE: Did you get too many people in the control room during the event?

MR. HOPKINS: Not really, no. We had very few sightseers. The people who showed up were utilized, for the most part. Keith Pope -- I mean, several of the people I mentioned, you know, were not part of our normal shift, they showed up and got put to work. We maintained a pool of people who had come -- I mean, you know, they came to offer their services and we maintained a pool of them off to the side, you know, so we'd have readily available bodies to go do things.

MR. WEST: Could you give us a rough estimate of what was the maximum number of people in the control room at any particular time during this event?

MR. HOPKINS: In the whole control room -- I mean, you know, not just at the controls area, but the entire control room, there might have been -- well, I do know that Norma Jenkins, who was making a list for security accountability purposes, came up with fifty-five or sixty.

MR. LYON: Is that both units?

MR. HOPKINS: That's both units, that's correct. I mean, that's in the back, you know, in the kitchen, bathroom, just everywhere.

MR. CHAFFEE: How many of them were in the control room and tower area? Fifty of them, or --

MR. HOPKINS: No, no, not even close. The normal control room staff consists of three SROs and five ROs, so we were all there. I had two emergency plan communicators; George Bockhold, who was relieving me as emergency director. I had an extra operator on the headsets with the diesel, I had an extra supervisor to monitor the Proteus. There was a shift superintendent who came over and offered assistance that was talking to the NRC on the EMS. There was a shift superintendent that was passing through that was filling out emergency forms for my review approval, and Jim Swartzwelder, manager of operations, and there was several transient types coming through getting assignments and leaving. Steve Chestnuts for the containment closure, Mike Lackey for the mid-loop, you know, buttoning up.

MR. CHAFFEE: Who was it that was on the phone with the NRC?

MR. HOPKINS: Jeff Gasser.

MR. CHAFFEE: Jeff Guestler?

MR. HOPKINS: Gasser, G-a-s-s-e-r.

MR. CHAFFEE: Dave Gasser.

MR. HOPKINS: Jeff.

MR. CHAFFEE: Jeff Gasser. Okay. Did you have any problems in the dialogue that you're aware of with the NRC, any --

MR. HOPKINS: Jeff asked me several questions, but I don't recall what they were, just mostly clarifications and, you know, "Is this going on?" you know, with yes or no, but I don't recall any specifics.

MR. CHAFFEE: Did you have any more diesel questions, Rick or --

MR. KENDAL: Not that I can think of at this time.

MR. CHAFFEE: There is one thing about the diesel that -- you said, when we talked on Friday, that you had this diesel trip in the -- you had a discussion with somebody in engineering about what that really meant and --

MR. HOPKINS: Right.

MR. CHAFFEE: -- and what you could do. You might want to go through that, because that might be important to recollect.

MR. HOPKINS: Okay. After the second diesel trip, and we knew it was jacket water pressure, I told somebody to beep Kenny Stokes. He's the engineer for the diesels. I thought Kenny was here; he wasn't, he was on his way home at the time. It was several minutes later -- I don't recall if we

had restored power from the transformer at this time or not, but it was well into the event, the diesel was already up and running when he called. Somebody else in the control room had called another individual, I don't remember who -- they told me at the time but I don't remember who it was, but it was like Stokes' supervisor or something -- they, you know, presented the question. My question was how low could we go with the jacket water pressure? What was, you know, acceptable in this situation and what was not acceptable, and use that information for determining whether to continue running the diesel or not. The response that the other individual got was the pressure is not so important as is the temperature. You know, if the temperature remains in spec then, you know, let it run. That's essentially what Stokes told me when he called; he called in several minutes later. He said, you know, as long as the, you know, jacket water temperature is okay, then it should be fine, don't worry what the pressure is.

MR. CHAFFEE: Did he put on his EP hat yet?

MR. LAZARUS: Well, he started to, I think.

MR. HOPKINS: I've been dodging that. Don't write that down.

MR. LYONS: Why not?

MR. LAZARUS: Go back and put on your other hat. My name's Bill Lazarus, I'm the EP Section Chief in Region One. So I want to refer to some of the EPS specs and

feedback. So if you'd go back and tell us, just in your own words, narrative-wise, the classification, how the classification took place, how the announcements took place on the PA system; basically what was going on in the sequence for --

MR. CHAFFEE: But before you do that, before you go through that, please, for the rest of us, just kind of explain how this thing is organized. In other words, you have certain responsibilities as the ED, and I guess there's certain people -- sort of set the stage for who was up there to help you doing all this stuff so we can understand as you take us through.

MR. HOPKINS: Okay. Typically, the way it's designed, the way our plan is designed, when anything happens the shift superintendent is the emergency director, initially. I determine which classification of the emergency plan we're in --

MR. CHAFFEE: Assuming you actually look it up in the book and classify it, or you guys memorize it, or you --

MR. HOPKINS: No, we look it up in the book. I mean, everybody knows loss of all AC for fifteen minutes in the site area, but I would go look in the book just to make sure.

MR. CHAFFEE: Did you do that in this case, or

did you just know it?

MR. HOPKINS: I had an individual looking for me, but yeah, I did know it. So, you know, when it happens I'm the emergency director. There are three or four little forms we fill out, go through just basic information type, that is given to the designated communicator, the shift clerk; give to the shift clerk, she makes the E and N notifications. The NRC, the ENS notification is made by me or a knowledgeable designee, which we try to use a knowledgeable designee so my time's not tied up talking on the telephone. The in plant announcement at this particular time was made by Chris Eckert.

MR. CHAFFEE: Who's that, what is his position?

MR. HOPKINS: He's a manager in training, newly licensed SRO who's going to come on shift as a shift support supervisor. He just happened to wander through and said, "Is there anything I can do?" "Yeah, here, do this."

MR. CHAFFEE: Your shift clerk that makes the --

MR. HOPKINS: E and N.

MR. CHAFFEE: -- E and N announcement, what's her -- what is that individual's normal functions and how are they trained in doing that?

MR. HOPKINS: She handles -- her normal functions --

MR. CHAFFEE: Yeah.

MR. HOPKINS: Or --

MR. CHAFFEE: Both.

MR. HOPKINS: Okay, her normal functions are the administrative type paperwork for a shift.

MR. CHAFFEE: Like watch rotations and --

MR. HOPKINS: Yeah, uh-huh.

MR. CHAFFEE: -- pay and that kind of thing?

MR. HOPKINS: You know, make sure everybody gets paid, all the procedure updates, she updates all our manuals. They do have -- I'm not real familiar with what their communicator training involves, but they do have communicator training. They have an initial, and as part of their badge recall, they have to go back again.

MR. CHAFFEE: Oh, so they have a qual, card for --

MR. HOPKINS: That they maintain -- they don't have a card they fill out -- but I mean, it's the same idea. They have a requal- --

MR. CHAFFEE: In the EP area they have a qualification for that particular EP function that they fulfill?

MR. HOPKINS: Yeah, that's correct, uh-huh.

MR. CHAFFEE: Oh, I see. Was that person trained on that?

MR. HOPKINS: Yes, she was.

MR. CHAFFEE: And that person made the ENN calls?

MR. HOPKINS: Yes, sir.

MR. LAZARUS: What was the timing on the classification? I guess there were several things happening so you eventually ended up with a site area emergency. What are some of the things you were considering for that?

MR. HOPKINS: We said -- 0940 was the time we declared the emergency.

MR. LAZARUS: Were there other -- you'd considered an unusual event or alert in this lower level before you got out in the site area emergency, so that was your --

MR. HOPKINS: By the time -- by the time we got to implementing the emergency plan it was, you know, this is where we are, it's 0940.

MR. LAZARUS: So at 0940 you declared site area emergency, and what happened then as far as filling out the forms and making notifications?

MR. HOPKINS: The forms were being filled out. I was talking with Bill Burmeister, he was the shift superintendent taking care of my forms for me. I told him, you know, "We're in a site area emergency," you know, "This is what we want to say," and he gave me -- the first form was the E and N form. That's the most time consuming to fill out and to

transmit. I did that and I gave it to Pauline, and she started talking. Then Jeff Gasser came through and I gave him the NRC form, I said, "Here, you fill this out," because I knew he was going to be on the phone for an extended period of time.

MR. CHAFFEE: So you've got -- how many different forms you've got to fill out? One for the NRC and one -- several others for different --

MR. HOPKINS: Well, we've consolidated it almost -- it's been almost a year ago, to just one for the state and local agencies; it used to be two different forms.

MR. CHAFFEE: Is the information on the two forms pretty close to the same, or is it --

MR. HOPKINS: The NRC form asks for which part of 10 CFR is requiring you to make the -- you know, do this, and then it has a big blank with no lines on it, says, "Event description."

MR. CHAFFEE: Oh, it'd be nice if it had some lines on it.

MR. HOPKINS: Well, it would limit how much you could write, yeah. But I mean, that's -- you know, regardless of the form, when you call -- we call it the operation center; when you call the operation center with something of this nature, everybody knows, you know, you're stuck to the telephone. There's a tremendous amount of applicable and nonapplicable questions that they go through.

MR. CHAFFEE: Did you get a lot of nonapplicable questions in this event?

MR. HOPKINS: No, I didn't. I'm sure Jeff did, though. That's why I put Jeff on the phone.

MR. CHAFFEE: Okay, fair. We're going to talk to Jeff and see what he got, 'cause you have to realize, we're not just looking at what happened here, we're also looking at how our people handled in this thing, also.

MR. HOPKINS: Oh, I understand that.

MR. CHAFFEE: I want to make sure we understand the whole picture here.

MR. HOPKINS: I mean, what it seems like is the individual on the other end has a form he's filling out, and he's just, you know, going through asking the questions. That's just gut feeling.

MR. LAZARUS: And just for your clarification, that is, in fact, true. There's been an information notice sent out on plants so they should be aware of the information that he's going to ask them so it shouldn't be a surprise. We're trying to work with a lot of the sites to make the forms consistent, so when they call in they know what questions he's going to ask before they call.

MR. HOPKINS: That would help the information exchange.

MR. CHAFFEE: And you have someone in your

staff that fills the forms out, not you, right?

MR. HOPKINS: If this had been three o'clock in the morning, I would have filled them out myself.

MR. CHAFFEE: Is [illegible] right?

MR. BILL JONES: And I [illegible]ink I asked you Friday and that you had probably gotten involved in the telephone conversation, too.

MR. HOPKINS: Would I have?

MR. BILL JONES: Yeah.

MR. HOPKINS: If there had been nobody else available, yeah, I'd have had to.

MR. TRAGER: You'd have been tied up, though. You wouldn't have been able to direct if you were tied up on the phone?

MR. HOPKINS: 10 CFR says I have to talk on the telephone.

MR. CHAFFEE: So if this had been a bad shift event, then what you're telling us is that you would have been tied to the phone and -- you guys don't provide for somebody else to do that?

MR. HOPKINS: Let's see, that's two or three questions in one. There's nobody on shift whose, you know, job is to do that. I would have been tied to the phone, but --

MR. CHAFFEE: To the extent we didn't let you go or you didn't tell us that, "I can't talk now."

MR. HOPKINS: Well, you know, I'd have talked to -- I've have been carrying on two different conversations, one of which was extremely important and the other which wouldn't have been. You know --

MR. CHAFFEE: That's fair.

MR. HOPKINS: -- you can draw your own judgments.

MR. LAZARUS: Okay, let's go back to the beginning. Mr. Burmeister filled out the forms, you approved it, gave it to Pauline, and she started to make the E and N notifications.

MR. HOPKINS: That's correct.

MR. LAZARUS: What happened next? Were you aware of any problems of making those notifications?

MR. HOPKINS: At that time I was not aware of any problems. I did know, you know, 'cause the phone is -- the backup phone is right behind -- is up on the tower behind th. big column there. I did -- I mean, I kept, you know, keeping an eye on Unit Two, because I'm responsible for that too. I noticed after some period of time that in addition to Pauline was Teresa Jones, Alberta Anderson, and Norma Jenkins, you know, all there. Let's see, the three of them, Pauline and Teresa and Alberta were up on the tower at the telephones and Norma was down below talking to them, but I was not aware of the problem they were having.

MR. LAZARUS: When did you become aware of the notification problems?

MR. HOPKINS: Gosh, it was later in the day.

MR. LAZARUS: So it was long after the event was over?

MR. HOPKINS: Oh, yes. Her name's Dewbrey now, it's not Jenkins.

MR. LAZARUS: That's why I was writing it out, I thought that was her name.

MR. HOPKINS: Yeah, D-e-w-b, something. She's been married for over a year and nobody knows her last name yet.

MR. LAZARUS: You had mentioned earlier that you were -- that you were in the process of turning over the emergency director at some point in this.

MR. HOPKINS: Yes.

MR. LAZARUS: When did that happen?

MR. HOPKINS: It was prior to -- I can tell you exactly when it was. Bill Burmeister was filling out the first follow-up notification, which is thirty minutes after declaration. George had been talking to Bill about what the classification was since we had the diesel up and running, and I told Burmeister that I was not downgrading it, we were still in a site area as far as I was concerned, until I had the time to sit down and satisfy myself that we could downgrade. I

mean, just by default, we were still in a site area. I didn't feel the situation would allow me to take the time to go through and review for downgrad'ng. I don't know if a second notice -- if the first follow-up went out before or after we turned over. I tnink the first follow-up went out as, you know, we were still in the site area and I think we turned over immediately thereafter. I'm not --

MR. LAZARUS: So about a half hour after you informed the media of the site area emergency it was about a half hour?

MR. HOPKINS: Yes, that's correct, it was about a half hour.

MR. LAZARUS: There was a formal turnover at that time --

MR. HOPKINS: That's correct.

MR. LAZARUS: -- Mr. Bockhold announced that he was taking over as emergency director --

MR. HOPKINS: That's correct.

MR. LAZARUS: -- so everybody would have that --

MR. HOPKINS: Yeah, he announced it in a loud voice.

MR. LAZARUS: Is that normal? I would expect that in most cases that would take place when the EOF is activated.

MR. HOPKINS: I have been involved in this actual emergency and in one drill, it was an unannounced drill even, where George and I turned over as soon as he got to the emergency director. Really, that's better, I think. It allows me to return to control of the plant, which is what I do.

MR. WEST: Have you been involved in similar -- not necessarily a similar event, but events where something occurred on a night shift?

MR. HOPKINS: That required notifications?

MR. WEST: And also required you being on the phone.

MR. HOPKINS: No, I've never been involved that required state and local agency notification. Numerous times for NRC notification.

MR. WEST: Did you find that that interfered with the time that you had available to do things that you needed to do?

MR. HOPKINS: These particular instances, whatever the notification is for, it is usually -- I mean, it's a RAT and a trip is a four hour notification. An unplanned ESF actuation is a four hour, so I -- you know, when these things happen, there is sufficient time to, you know, either stabilize or restore, just whatever, before I make the notification, and before our time frame usually allows sufficient time to get my statement worded such that the questions are limited.

MR. LAZARUS: Do you have a clear understanding of your relationship with Mr. Bockhold, or whoever would be relieving you before that turnover actually takes place as far as who's in charge and who has authority to issue messages and who has authority for notifications? I mean, is that clear in your mind, as to --

MR. HOPKINS: Oh, there's no doubt in my mind.

MR. LAZARUS: So you would retain that up until the point that he says, "I'm relieving you"?

MR. HOPKINS: That's correct, and I did.

MR. LAZARUS: One of the things that I think several of us have alluded to is that you got a feeling for how you would have been faced with this on a back shift, without all the extra people who came into the control room. Do you have a feel for how many of the people were actually filling positions in the control room, especially the emergency response part of this, who were not normally shift people?

MR. HOPKINS: As far as the emergency response goes, there were probably -- I mean, I don't consider what I gave Eckert to do, announcing over the PA system -- I don't consider that -- I mean, anybody could have done that. There was probably two individuals that would not have been available during, you know, normal shift conduct, normal holiday night shift, as far as the emergency plan was concerned.

MR. LAZARUS: One other aspect I wanted to

talk about were the announcements that were made to plant personnel, as far as evacuation and accountability --

MR. HOPKINS: Okay. On the form for the site area emergency, it gives the PA announcement that you have to say. I made a conscious decision -- the form says, "Attention all personnel, a site area exists for Unit One due to such and such," something to the effect that all non-essential people exit the PA. I made a conscious decision, based on the situation, not to have non-essential people exit the PA, knowing that the emergency plan divides the entire site into two groups of people, essential people, who are emergency response organization, and non-essential is everybody else. Well, I had a tremendous number of non-essential doing work that had to be done and had to finish -- closing containment, mid-loop work -- there were people out at the switch yard assessing the damage and seeing what had to be done to restore normal power to the -- I forgot which -- the A RAT. If I'd have made the announcement, through the badge training, those people would have dropped their tools and left, which would have only served to make the situation worse.

My personal opinion is that evacuation at a nuclear facility has such a bad connotation that instead of preserving the health and safety of the people on site, I would be exposing them to a greater danger by having them trying to get out and go home. At this time we have -- I think there's about

a thousand contract people here who I'm not familiar with their knowledge and confidence in nuclear power. My gut reaction is that they were terrified, and would have been flying down the road to get out. It was not only for the plant's safety that we -- I say we -- that I decided we would not evacuate, but it was for the personnel's safety also. The situation was being contained to containment by the work we were having done by the people who would have been evacuated and, you know, there was no need to evacuate.

MR. LAZARUS: So the first message was just silent on mentioning evacuation?

MR. HOPKINS: That's correct.

MR. LAZARUS: You just announced you had a site area emergency --

MR. HOPKINS: Just a site area emergency and I don't remember what all else we said.

MR. LAZARUS: There was a subsequent announcement made. Did you talk about the site evacuation at that time?

MR. HOPKINS: We didn't make that announcement.

MR. LAZARUS: So there was never any announcement --

MR. HOPKINS: From the control room. Not to my knowledge, there wasn't.

MR. LAZARUS: That told people to evacuate or to report to their --

MR. HOPKINS: There was -- security -- part of the problem is -- I don't know if it's notification of an unusual event, I don't know if that's the threshold or not, but I know during alert all visitors are to leave the PA, and security felt like they were not getting -- this is just what I think happened -- I think security felt like the visitors were not leaving the PA in an expeditious manner, so somebody in security got on the page, you know, and said all the visitors had to leave. They got -- sometime later someone in security got on the PA and said everybody working in the cooling tower had to leave.

MR. LAZARUS: Without coordinating with the control room?

MR. HOPKINS: That's correct. I called the phone number for the shift captain, I don't remember who I talked to, and asked them, you know, not to interrupt the work at the cooling tower, there was no danger to the people at the cooling tower and there was no need for evacuation of the people at the cooling tower and to, you know, please allow the work to continue.

MR. LYONS: Now, you did this with the knowledge that the containment was closed, is what I thought I heard.

MR. HOPKINS: Yes, uh-huh, yeah, containment was closed.

MR. LYONS: What was your knowledge of the condition of the reactor core at that time and its potential for a problem, and how did you know?

MR. HOPKINS: Well, we were monitoring the in core thermocouples, which I think is a very safe assumption, as that's being the highest temperature in the system, right there on top of the source. When security was making their announcements about making everybody leave -- is that what you're talking about?

MR. LYONS: Yes, yes, exactly.

MR. HOPKINS: When security was making their announcements, we had power back and the temperature was, you know, back at 100, 95, 93 range. As far as I was concerned, the immediate problem was over and behind us, because we had restored power and were maintaining shutdown cooling. We still did not have the desired electrical line-up but, you know, we had made headway and were, you know, making preparations to restore it.

MR. LYONS: Is it well defined who has the call with respect to letting the personnel in the cooling tower either stay there or leave?

MR. HOPKINS: Yes, it's well defined. This is -- this evacuation is a place we found in our emergency

planning procedures where we set ourselves up -- "us" being Plant Vogtle -- as far as accountability. Security is required to account for everyone that had been in the PA within thirty minutes of the declaration of any of the classes of emergency classification. Until Tuesday, everybody thought that was wonderful. Tuesday we found out that that's not a good way of doing accountability, for the reasons I talked about earlier. Everybody has to leave, and then we have to try to get them back in so they can do some work. By calling for an evacuation, everybody badges out and security, you know, end up with people in the control room that are not accounted for, and in theory, that's the way it would be. Everybody would leave except the people in the control room, people in the TSC which have a card reader, and the people in OSC which have a card reader. That's how we had planned of performing accountability. I mean, personally, I found out Tuesday that that's not -- not the way to do accountability, we have to come up with a better way.

MR. LAZARUS: In a sense that I think they're focusing on the wrong areas, I mean, there's just a little bit of a slide -- the accountability issue is really there -- if you evacuate the site is when you're interested in accountability. After you evacuate it, you find out whether there was someone injured that you haven't been able to locate, then go back in and do a certain --

MR. HOPKINS: That's the whole idea. If you could identify where everybody is, then we know no one's injured, but that really didn't apply to what was happening here --

MR. LAZARUS: Because you had not had an evacuation?

MR. HOPKINS: No, we already -- security was at the switch yard when it hit, people had gone out there immediately afterwards. The truck driver and the truck escort, you know, were there. The only two people exposed to an injury were those two and, you know, they were accounted for immediately, almost. If we had followed the emergency planning procedures to the letter, the situation would have degraded -- it would become much, much more serious a situation than it was by deciding not to evacuate -- by, you know, ensuring that this mid-loop work and containment work was actually completed.

MR. CHAFFEE: Sounds like what you're saying is what's been uncovered here is that using the definition of non-essential people leaving, that is a nice term, but when you get into a real event where --

MR. HOPKINS: That's right.

MR. CHAFFEE: There's people that aren't part of the emergency response team but are needed for the emergency response and to do its function, somehow that has to be dealt with.

MR. HOPKINS: Yeah. There are many more essential people than the people in the TSC and the OSC.

MR. LYONS: Like the folks that make the plant run.

MR. HOPKINS: Yeah, by the people out doing the work.

MR. LAZARUS: And in most cases, in a site area emergency, that shouldn't be accompanied by an evacuation of non-essential personnel?

MR. CHAFFEE: Yeah, because -- I'm guessing, this is just a guess, that probably the way this thing was envisioned was having the event occur from power.

MR. HOPKINS: Exactly.

MR. CHAFFEE: So if it occurs from power, people aren't inside containment to begin with, if it occurs from power and you decide to declare emergency, that means you're anticipating -- intentionally you're going to get to the point where you're releasing activity, so if you're getting rid of non-essential people, the only people you want on site are the people that you classically think are going to deal with the emergency, which doesn't include the workers that are working with steam generator man ways and stuff, but -- so that the whole thing again is -- sort of the common theme in everything here is everything we've been doing seems to be focused on handling events from power, and we've not

necessarily thought through how to handle these events when we're shut down.

MR. HOPKINS: It's not -- I mean, it's -- what you said is still too broad. I mean, I can't think of a particular scenario now where evacuation would not be the best thing to do, but I'm sure there are many that do exist. Evacuation is good for a worst case type scenario.

MR. CHAFFEE: But it has to be applied thinkingly and specifically.

MR. HOPKINS: Oh, yeah.

MR. LYONS: Get a few clarifications if I could, the pieces that we really haven't quite covered yet. You've several times indicated you were putting a lot of emphasis on those ex-core thermocouples and that you had someone watching them and calling out values. Do you recall how hot those got?

MR. HOPKINS: I don't recall what Proteus was reading specifically. I know the highest reading on something was 118 and the highest on something else was 136.

MR. LYONS: But you don't remember which --

MR. HOPKINS: I don't know what came from where.

MR. LYONS: Okay, that's fair. Was the --

MR. HOPKINS: I think the Proteus was 136.

MR. LYONS: Which would be the ex-cores?

MR. HOPKINS: Right. Well, the other information I think came from ex-cores; I'm not sure. I think 138 was the Proteus, I'm not sure. That's easily -- could easily find out.

MR. LYONS: Was someone plotting those or --

MR. HOPKINS: Yes, uh-huh.

MR. LYONS: -- otherwise, and so did you have an extrapolated time to a key point, such as boiling or something like that?

MR. HOPKINS: No, sir.

MR. LYONS: That wasn't provided? But would you have known if it was imminent?

MR. HOPKINS: Oh, yes, uh-huh. I mean, I knew what the temperatures were as they were going up. I mean, I expected them to go up and -- I mean, I even remember hearing 138.

MR. LYONS: Did they increase at about the rate you anticipated, faster or slower?

MR. HOPKINS: I don't even remember.

MR. LYONS: When you asked --

MR. HOPKINS: I didn't expect to be boiling within ten minutes, if that says anything. I mean, I knew there was some finite amount of time it was going to take. It's a pretty large volume of water, you know, even only being

half full.

MR. LYONS: And you had been shut down for quite a while?

MR. HOPKINS: Right. And half the old fuel was out, so --

MR. LYONS: When you asked Mike to go ahead and bottle up mid-loop openings, what was your concept of what constitutes mid-loop openings?

MR. HOPKINS: What we were specifically talking about was the 8808D accumulator check valve bonnet being off, and the two or less -- less than two steam generators that had their man ways removed. I mean, other openings that existed at the time could have easily been thought of as "mid-loop openings," would have been the pressurizer, man ways, any of the other injection check valves, cube letter check valves or the SI check valves for RHR checks. Essentially any valve in the ECCS system that, you know, there's nothing between the valve and the primary except height, no other isolation. Any work that was going on on that, you know.

MR. LYONS: Okay, but your instruction to Mike was "bottle up the mid-loop openings"?

MR. HOPKINS: That's correct.

MR. LYONS: In the process of looking off into the future, had you thought of ways to have water to the

reactor cooling system if you did not get your electric power back? Could you sort of discuss what those were?

MR. HOPKINS: The way that it comes to mind would be --

MR. CHAFFEE: Can I ask a question first? Did your thinking processes get into this during the event or --

MR. HOPKINS: Into --

MR. CHAFFEE: If -- the making --

MR. HOPKINS: If we couldn't get power back, what we do?

MR. CHAFFEE: Yeah.

MR. HOPKINS: Yeah, I mean, it ran through my mind a couple of times. I didn't waste a lot of time on it; I mean, it was more important to deal with the situation at hand than to look at, you know, what's going to be happening, you know, many hours or maybe days from now. I mean, I knew that was -- I'd have plenty of time to decide what had to be done before that became the major issue. But, I mean, some things we could have done was just gravity flown from the RWST to the vessel. The vessel had several openings in it that it was not feasible to even think about closing; all the common seals on the head, they nad not been -- or the mechanical seal part had not been installed. The pressurizer man way, which did get installed. I mean, that can flow at a pretty good -- a large flow rate of water through the various sources, RHR, the SI

system, SI pumps, specifically, and charging pumps. I remember during --

MR. CHAFFEE: So as far as ways of getting water in there --

MR. HOPKINS: There were many ways, yeah, many ways.

MR. WYCKOFF: Were you putting water in?

MR. HOPKINS: No -- yes, we did, I take that back. Wait a minute -- no, we didn't. I'm sure we didn't. I was thinking of something else.

MR. LYONS: Let me back up a minute. What was the condition of feeding from the RWST at the time of loss of power?

MR. HOPKINS: At the time of loss of power, it would have required -- two feet from the RWST would have required opening valves.

MR. LYONS: Were you feeding from the RWST at the time?

MR. HOPKINS: No, sir, we were not.

MR. CHAFFEE: Had you previously that day?

MR. HOPKINS: No, I don't think so. I think we'd even -- no, that was Friday, excuse me, this past Friday.

MR. LYONS: When you got the call from inside, the feedback that the steam generator man ways were closed, did you provide any additional instructions to the

folks inside the containment?

MR. HOPKINS: Not to them personally. I talked with -- when all this started, I talked with Ronald Grand, the manager of Chemistry and HP, and told him to -- not using -- I mean, I told him I didn't want to use the term evacuate, but I wanted to get everybody out of the can, you know, an orderly fashion but expeditious, and then we hung up the phone and Ron left to go do that. And I got to thinking maybe Ron, in his zealousness to comply, was going to get rid of my people that I had doing work, so I called him back and said, "The people doing the mid-loop work, the people doing the hatch work, and the operator watching the Tygon tube will have to stay, everybody else has to leave." I told Ron to send an HP tag to the operator at the Tygon tube.

MR. CHAFFEE: Why was that?

MR. HOPKINS: Because he was getting afraid. When the --

MR. CHAFFEE: He was on the headphones or something?

MR. HOPKINS: Yeah, when the pumps tripped, he saw a large change in the Tygon tube level, just to the water surge no longer going to the pump, just backing out --

MR. CHAFFEE: The Tygon went up or down or --

MR. HOPKINS: It went up about this far, was what I've been told. He was getting very excited. He knew

something -- he didn't know exactly what had happened, he knew something had happened because it got just deathly quiet.

MR. CHAFFEE: That's when the RHR pumps tripped off?

MR. HOPKINS: Yeah, and all the fan coolers turned --

MR. CHAFFEE: They're inside containment?

MR. HOPKINS: No, the RHRs are outside.

MR. CHAFFEE: Oh, he heard things inside containment --

MR. HOPKINS: All the flow quit, all the fans slowed down; he knew something was going on, and seeing this large fluctuation in level, he was getting scared. I mean, I can't say that I blame him.

MR. CHAFFEE: Was he a PEO, been around a while or --

M. HOPKINS: I don't know who it was. But I told Ron, you know, in addition to the people I had doing the work with the mid-lube containment, to send an HP tech to go sit with my operator. That was all, you know, not only for the calming effect, but somebody there with some HP expertise would know when it was time to leave if it degraded to that point.

MR. LYONS: At the time or during this event, were there any other instances that you're aware of that people similarly got nervous?

MR. HOPKINS: Well, right at the very beginning, I did, and I stayed, you know, pretty nervous throughout the whole event. I maintained composure.

MR. CHAFFEE: Did the fact that you announced the site area emergency, is that what -- is that the thing that got everybody triggered, being really nervous?

MR. HOPKINS: I don't know, 'cause I mean I was, you know, I had no idea what was going on of, you know, people out, you know, doing things. I had no knowledge of that whatsoever. I mean, everybody was real excited; everybody at the control room was very excited, or in an excited state. But I wouldn't use the term panic; I didn't detect any panic from anyone.

MR. LYONS: More importantly, was their state of excitement affecting their performance, in your judgment?

MR. HOPKINS: I think the state of excitement did affect the performance in that it made it better. Everybody -- I mean the people in particular that I'm talking about here are the control room people -- was very deliberate in their actions. It was understood that a mistake or an operator error couldn't be tolerated. We might only get one chance and it had to be right. So, yeah, it did affect them, but it was an extremely positive effect.

MR. LYONS: Could we move over to your

procedures a little bit? You indicated earlier you have a loss of off site power, a total loss of AC procedure. How useful was it for this situation?

MR. HOPKINS: Not very.

MR. LYONS: That was written for --

MR. HOPKINS: For out power.

MR. LYONS: And not these conditions?

MR. HOPKINS: Correct.

MR. LYONS: You also indicated that you had a RHR, loss of RHR procedure. Would you comment on both the strengths and weaknesses of that procedure, and what you would suggest or recommend, if you feel like it, to make it better.

MR. HOPKINS: The loss of RHR at mid-lube procedure is written, assuming the loss is due to loss of suction. It never takes into account that you just don't have power, you've got plenty of water and no power. I don't -- without having the procedure in front of me, I mean the thing it talks about is, you know, if containment's open, get it closed, bottle up your, you know, any mid-lube work going on, you know, get the covers put back on. They don't have to be torqued and, you know, with new flexatalics and stuff but, you know, get the top on, so limit the inventory loss.

MR. LYONS: That's all in there?

MR. HOPKINS: I don't know if that's in there or not. I mean, this --

MR. LYONS: I'll find out.

MR. HOPKINS: This is getting more into, you know, what we've been exposed to in the past with -- I mean, Diablo Canyon is the one that comes to mind. You know, the recommendations out of Diablo Canyon were, you know, get two thermocouples as soon as you put the head on. You know, you have to think about this stuff, the mid-lube, get the containment closed, you know, that type of stuff is good, but the procedure was not written for loss of power, shutdown coolant loss.

MR. LYON: Do you remember the status of the steam generators at the time?

MR. HOPKINS: As far as secondary?

MR. LYON: Yeah, and their availability.

MR. HOPKINS: All four steam generators were in wet lay-up.

MR. LYON: Would you have tried to use those for cooling if you had not been able to restore electric power, or what would you have done?

MR. HOPKINS: Yeah, that would have been pretty much the only option. If we could not restore power for shutdown cooling, allow the primary system to heat up to the point of boiling and it's -- the word is just reflux cooling. It's essentially a type of natural surge with vapor in the top half of the pipe going up into the tubes and condensing,

transferring the heat to the secondary, then --

MR. CHAFFEE: So is that where this would have all led, if you hadn't --

MR. HOPKINS: Excuse me?

MR. CHAFFEE: Is this where this would have all led if you hadn't been able to get cooling back?

MR. HOPKINS: I believe so, yeah.

MR. CHAFFEE: Had you guys been previously trained on that?

MR. HOPKINS: (No response)

MR. CHAFFEE: Did you know that before the event?

MR. HOPKINS: Yeah, yes, sir.

MR. LYON: Well, what would you have done --

MR. HOPKINS: Several years ago, '85 or '86 time frame.

MR. LYON: What would you have done with the diesel generator? Let's say the diesel was -- we're going down the same primrose path, John.

MR. HOPKINS: You're either going to get me again or give me a chance to redeem myself.

MR. LYON: Let's say that you didn't have the cooling for some reason for the diesel that you needed. You knew that you could run it for some short indeterminate

amount of time, how would you have interacted with using the diesel versus this reflux cooling kind of thing? And, in fairness, I know we discussed this at some length after your previous discussions and interviews with us. So try to put yourself, if you will, in the frame of mind that you were in prior to that conversation.

MR. HOPKINS: Well, there's two ways to look at that: one is, you can run the diesel in a cyclic mode, start it and run it until you reach either the predetermined instrument set point trips or your own personal predetermined trips, that type cyclic mode. Or we could go into this, just let, you know, nature take its course with heat flow and thermodynamics and go into the reflux cooling. I've seen numerous articles in various newspapers and magazines and that type stuff on what happened here, and everybody's under the impression that we could have gone for at least a day before the situation would have led to degraded fuel.

MR. LYON: Is that your judgment? And then I only have two more questions.

MR. HOPKINS: From the people that it comes from, I have to agree, looking at their knowledge level and my understanding of thermodynamics. I mean, I have to take their word for it. It seems like it could be feasible that, you know, twenty-four hours --

MR. CHAFFEE: But as of the day of the event,

would you have -- this is hard because I realize you've read so much now it's hard to sweat it through, but is it on the day of event or that night, if you had sat down and we had talked about this thing, would you have come up with this reflux thing and that it would have taken a day or whatever or, I mean, how --

MR. HOPKINS: I'd like to think I would have. I mean, you know, it's not something that I learned since Tuesday; it's something I've known about for quite sometime. If you'd have asked me Tuesday morning right before this happened how long we could go without RHR, I wouldn't have said a day; I would have guessed, you know, maybe ten or twelve hours. But now that I think about it and look at it in some depth, twenty-four hours, you know, might be a conservative amount of time. Could probably go longer.

MR. LYON: Was your STA helpful during this event?

MR. HOPKINS: No.

MR. LYON: Was he in the control room?

MR. HOPKINS: If it was Bruce, he was in the control room. Well, yeah, he was in the control room because they were both there.

MR. CHAFFEE: Let me ask you a question, do you have an STA for each unit or one ST --

MR. HOPKINS: We do not have a person whose

job is STA. We have a STA function that is satisfied by one of the degreed SROs on a shift. Would an STA, if we'd of had this individual who's an STA, if we'd of had that, he would have been helpful in -- that would have been another body I could have sent out to do something, if I'd have needed him.

MR. JONES: Is it not true the STA isn't required when you're in total shutdown or is it required here?

MR. HOPKINS: I don't know, we'd have to see. It's in the text --

MR. CHAFFEE: Oh, I see. So your STA function is filled with somebody who's on shift for another reason?

MR. HOPKINS: That's correct.

MR. JONES: If you go into the control room and see the boards and you say who's on shift, right beside one of those names is STA, right?

MR. HOPKINS: There's a little sticker that says STA, that's correct, like fire brigade leader and fire team members.

MR. JONES: And that person that's filling that function would have been required to on shift, even though you were in shutdown?

MR. HOPKINS: I don't understand.

MR. JONES: Well, you have a combined STA SRO --

MR. HOPKINS: Uh-huh (yes).

MR. JONES: So that person would have been required to have been on shift?

MR. HOPKINS: Yes. The STA is somebody who's required to be on shift and that's who --

MR. CHAFFEE: It seems to me they're required -- some places they're required when the plant's in power; I'm not sure of the requirements when the plant is shut down but in your case, you had one that's shut down and one in power.

MR. HOPKINS: We feel, you know, we have somebody who is assigned to that function.

MR. CHAFFEE: So you always have somebody in the control room whose assigned the function of STA, no matter what --

MR. HOPKINS: He may not be in the control room at the time but there's always somebody on shift, yeah.

MR. CHAFFEE: And that's one person whether both units are operating or both are down or --

MR. HOPKINS: That's correct.

MR. LYON: I said I only had two more; I've only got one left. No, go ahead.

MR. JONES: One STA per unit; is that right?

MR. HOPKINS: No, one per site.

MR. JONES: One per site, okay.

MR. CHAFFEE: The person that performs the STA function, is he a licensed SRO? By default. I mean is the guy

who --

MR. HOPKINS: Say again.

MR. CHAFFEE: Is the person who performs the STA function, or who's on shift, is he typically somebody who's a licensed operator?

MR. HOPKINS: Yes, uh-huh, yes.

MR. CHAFFEE: Licensed RO or SRO both?

MR. HOPKINS: SRO.

MR. CHAFFEE: SRO.

MR. LYON: Kind of a combined question, John.

MR. CHAFFEE: I'm not done.

MR. LYON: Oh, I'm sorry.

MR. CHAFFEE: Is the person who performs the STA functions, in that he's also filling another role, have you guys looked at whether or not he can do both at the same time or is there ever a conflict or --

MR. HOPKINS: Me, personally, I've never -- it doesn't matter to me. Plant -- if I'm answering for Plant Vogtle, you know, I'm sure it's been looked at in some detail. I mean, I know it has. There were some people in NPO and the NRC are not real pleased with the idea. They don't think it's --

MR. CHAFFEE: Yeah, that's why I'm asking the question. I'm not sure, but I hadn't heard this arrangement

before. I'm sorry, go ahead.

MR. HOPKINS: The more people that don't like it, the more in-depth you have to look at it, so I'm sure it's been looked at in some depth.

MR. LYON: What is your assessment of the overall performance of your team, including yourself, and if you had it to do over again, what would you do differently, if anything?

MR. HOPKINS: I'm extremely proud and -- I'm extremely proud of the way the -- my -- gosh, this is kind of odd 'cause it's not just my crew here; there's a lot of extra people, of the way the operation staff and the plant staff responded and acted to limit this event. The professionalism is more than I'd have hoped for. It's just -- I mean, it's like you turned a switch and everybody went into this accident mode. It was just like being in the simulator. There was no extraneous information being passed back and forth; only pertinent data was being talked about and was being asked for and being given, and this is both units. Unit Two was pretty much a normal trip. I think the plant staff performed in an admirable manner. Anything less, you know, could have possibly led to worse circumstances and I think they realize that.

MR. CHAFFEE: So there's nothing different that you can think of that's significant in your mind, I guess, that you guys should have done differently? I can tell you

believe you guys did the best you could and I don't --

MR. HOPKINS: If it happened the next time I come on shift, I would look at -- the only thing that I know I would do differently would be the accountability. I would try to come up with a way to assist security for their accountability requirements. Just -- I mean, that's an unfair question you've asked.

MR. LYON: Of course, I agree.

MR. HOPKINS: But I think that's the only thing I would do different. I would look to see if there's a -- you know, a way to perform accountability without evacuating because that's such a bad -- bad connotation, it's a bad word.

MR. CHAFFEE: Does anybody else --

MR. LAZARUS: I had two quick follow-ups if you're ready to shift back to that for a minute. Were you aware of any changes that were made to your initial notification form of the site area emergency?

MR. HOPKINS: I changed it, twice. I know -- if you've got a copy of it, I can show you what I changed. One of them was, I changed one of the times. We declared the emergency at 0840; down at the bottom, yeah, it's the bottom right-hand corner, I wrote 0848, which is what time it was when I signed that form, that particular form.

MR. LAZARUS: But I'm talking about after you gave it to Pauline to go ahead and make the notifications.

MR. HOPKINS: No, not at the time I wouldn't. I know what you're talking about, but I was not aware of it at tha time.

MR. LAZARUS: When did you become aware that Georgia had not been notified --

MR. HOPKINS: It was -- it was late in the day.

MR. LAZARUS: So it was well after the incident?

MR. HOPKINS: Oh, they had been, you know, notified and brought up to speed before I got back.

MR. CHAFFEE: Did you guys do a critique of this thing afterwards?

MR. HOPKINS: It's in progress, I think, or it was Friday. I don't know if they've finished yet or not.

MR. CHAFFEE: Did you guys write statements and stuff for what you --

MR. HOPKINS: I have not written a statement; I think everybody else has.

MR. CHAFFEE: Other than seeing a lot of stuff in the newspapers, have you had a lot of discussion with other people on the stuff after the event that has shaped what you think now about the event? I mean, you've read some papers --

MR. HOPKINS: You mean plant people or --

MR. CHAFFEE: Right, your -- I mean what I'm

saying is, we realize --

MR. HOPKINS: Not really. For the most part, I've not -- the plant people haven't talked about it with, you know, me that much. The most -- I mean the comment that I hear -- I've heard the most was, you know, "Boy, I'd hate to have been in your shoes Tuesday," and I mean I tell them that, you know, that was the most enjoyable, most satisfying day I've ever had as far as nuclear power is concerned. It was. I mean, it was the most satisfying, as far as job performance and --

MR. CHAFFEE: I can understand that. I've been there before in different circumstances.

MR. HOPKINS: But the other plant -- the plant people don't -- I mean, they see it as a big negative and as far as I'm concerned, it was a big positive in that we handled a situation that I've since found out was not really thought that possible or probable, and I think we assessed the situation rapidly and accurately and dealt with it accordingly, in a real short period of time.

MR. CHAFFEE: Bill, did you have --

MR. LAZARUS: No.

MR. CHAFFEE: Anybody else?

MR. KENDAL: Yes. Are you aware of any alarms concerning the diesel generators starting their system during the event?

MR. HOPKINS: No.

MR. TRAGER: A couple of quick ones. The time between when you called Ron LeGrande about getting people out of the containment and had some authority to set the (inaudible) but didn't want to get vital people out of containment, how long was that, approximately?

MR. HOPKINS: A very short period of time. Within a couple of minutes, yes.

MR. TRAGER: The other thing was, you had a lot of people on shift and they were useful, extra people, because of the outage -- Keith Pope, John Acree, Dave Vineyard -- and as you said, you felt you did a real good job but there was a certain level of stress, had those people not been there, so maybe it's a good thing to have qualified people, extra qualified people on shift when you're going through evolutions like this.

MR. HOPKINS: Is that a question?

MR. TRAGER: That's a question. Otherwise, would you have been maybe overburdened otherwise?

MR. HOPKINS: No, not really. It would have required more from the individuals that would have been present if we'd have been normal shift complement. But the prioritization of what needed to be done would have been a little different whereas, understand the importance of notifying state and local officials and the NRC and that's, you

know, extremely important. But if there were not enough individuals to allow that and allow control or recovery of the plant, then that would have been a secondary type -- in this particular case -- a secondary priority. And my personal opinion is, and what happened, if I can take actions and direct actions to prevent -- I had to have to use the NRC's key word here -- release of radioactive materials to the environment, you know, to the detriment of the public health and safety, if I can stop that, then notifying the state and local agencies, and the NRC for that matter, is merely passing information along. You know, "This is what's happening but don't worry about it," that type information. If the situation had degraded to where a loss of inventory, you know, loss of heat sync, radiological hazards, were imminent, then the priority for notifying state and local, you know, rapidly becomes the top priority.

People ask me, people in the street, you know, ask me what I do, you know, and I try to tell them that my job consists of maintaining the health and safety of the general public. And, you know, that's how I look at it. I'm pretty much the last line of defense.

MR. LAZARUS: Do you exercise -- do you do your emergency drills from a simulated emergency plan, I guess --

MR. HOPKINS: Not all of them. The big graded drill is done in the simulator. We have -- I guess these are

just in-plant drills that we do to test our own readiness for our own peace of mind, you know, in the plant, we'll be sitting there running and they'll come in and hand you a piece of paper, you know --

MR. LAZARUS: Doing it from a simulator gives you a real feel for how many people you need to handle all of the notifications and ones to handle the plant?

MR. CHAFFEE: You don't do the notifications in the simulator, do you?

MR. HOPKINS: I don't know. No, when they do the simulator, the TSC, I think, does all the --

MR. LAZARUS: Well, it still has to be simulated by someone and and it gives a better feel for how many people would really be necessary --

MR. HOPKINS: I've never taken part in one of the big graded drills, I don't know.

MR. TRAGER: To continue with the question about the number of extra people on the shift and I mention John Acree as being one of the people. He's the person that did the emergency start on the diesel. If John had not been there, would you have gone to one of the PEOs to do what he did?

MR. HOPKINS: Yeah, uh-huh.

MR. TRAGER: Then, I notice the procedure for operation of emergency diesel generators is a normal operating

procedure. It hasn't been -- although it's an important piece of safety equipment and it's used in emergency operating procedures, the instructions for operating that equipment are just a normal operating procedure; it's never been treated the same way, and I guess the question I asked you the other day is, do you think maybe it should be given the same kind of attention as an emergency operating procedure? I guess I ask the question again.

MR. HOPKINS: Yeah, and I think it should be looked at with AOT type procedure and --

MR. TRAGER: Put a higher level then?

MR. HOPKINS: Oh, yes, what we call an abnormal operating procedure as opposed to an EOP. But yeah, I agree with that.

MR. TRAGER: In looking at it, I think there were a couple of things that looked like they could use improvement, but had they been treated, I think, with the same attention as your emergency operating procedures, it might be a lot easier to use and less chance of people making mistakes.

MR. HOPKINS: I agree.

MR. CHAFFEE: Is that -- anybody else? Thank you, John, you did well.

[INTERVIEW CONCLUDED]

CERTIFICATE

I hereby certify that the forgoing interview was reported by the method of Stenomask With Backup, and the testimony given therein was reduced to typewriting by me or under my direction; that the foregoing pages numbered 1 through 78 represent a true, correct, and complete transcript of the evidence given on March 26, 1990, by the witness, John Hopkins; that I am not a relative, employee, attorney, or counsel of any of the parties; am not a relative or employee of attorney or counsel for any of said parties; nor am I financially interested in the action.

This the 27th day of March 1990.

Margie Fox

MARGIE FOX, CCR B-1176

CERTIFIED COURT REPORTER

INTERVIEW:

Mr. John Hopkins
Shift Supervisor/Plant Vogtle
March 26, 1990

ERRATA SHEET FOR THE INTERVIEW OF
JOHN HOPKINS TAKEN ON MARCH 25,1990

- - -

I do hereby certify that I have read the within and foregoing pages numbered 1 through 78, and that:

_____ 1) There are no changes noted.

_____ 2) The following changes are noted:

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If supplemental or additional pages are necessary, please furnish same annexed to this errata sheet.

This, the _____ day of _____ 1990

_____
JOHN HOPKINS

WITNESS:

_____