

UNITED STATES NUCLEAR REGULATORY COMMISSION

IN THE MATTER OF:

DOCKET NO:

AN INVESTIGATIVE INTERVIEW OF: James Murdock

APPEARANCES

Larry Robinson, Investigator, Office of Investigation
Jim Stone, Chief, Program Coordination Section, Vendor Branch
Jack Kindt, Investigator, Office of I & E, Office of Investigation

LOCATION: Tennessee Valley Authority
East Tower, 3rd Floor
Knoxville, Tennessee

PAGES:

83

DATE: 4/8/86

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EXHIBIT ³⁰
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1 MR. ROBINSON: Let's go ahead and go on the
2 record.

3 For the record, this is an investigative
4 interview of Mr. James Murdock of Nuclear Safety Review
5 Staff, Tennessee Valley Authority, Knoxville, Tennessee.

6 The date is Tuesday, April 8th, 1986. The
7 time is 2:20 p.m. Persons present at the meeting are Mr
8 Murdock, Larry Robinson, Office of Investigations, NRC,
9 Jim Stone, NRC Headquarters, Inspection Enforcement Staff
10 and Jack Kindt of Investigation, NRC.

11 Will you please stand, Mr. Murdock, and
12 raise your right hand? Do you swear that the informatio
13 you're about to give in this interview is the truth, the
14 whole truth and nothing but the truth, so help you God?

15 THE WITNESS: I do.

16 JAMES FREDRICK MURDOCK,
17 being first duly sworn, was examined and testified as
18 follows:

19 EXAMINATION

20 BY MR. ROBINSON:

21 Q For the record, will you please state your
22 full name?

23 A James Frederick Murdock.

24 Q And your residence address?

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Q zip?

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Q And your residence phone?

A

Q And what is your current job title and employment?

A I'm currently Acting Chief of the Projects and Requirements Branch of the Nuclear Safety Review Staff.

Q Okay. How -- when did you first come with TVA? When were you first employed by TVA?

A January, 1984.

Q Has your experience been in NSRS during your entire period of employment with TVA?

A Yes, it has.

Q And what is your nuclear experience, if any, prior to TVA?

A I was a site representative for the Division of Reactor Development and Technology of the AEC from 1967 until 1974. I then spent a year as a site representative at the Westinghouse Advanced Reactors Division, Walls Mill, Pennsylvania.

I then was project engineer and ultimately a Branch Chief in the Office of Engineering of the Clinch

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1 River Breeder Reactor Project Office in Oak Ridge.

2 Q Is this in 1975 or '76?

3 A Starting in '75 and coming through the first
4 of '84.

5 Q And you, who were you employed by
6 officially, the Department of Energy?

7 A ERDA and then the Department of Energy.
8 They were successor companies, if you will, to the AEC.

9 Q Okay. When you first came to NSRS, what
10 were your responsibilities?

11 A I was the group head of the Technical
12 Analysis and Requirements Group, which was one of two
13 groups in the Nuclear Safety Review Staff at the time.

14 Q And who was your immediate supervisor at
15 that time?

16 A Newt Culver.

17 Q Okay. And who worked under you in the
18 Technical Analysis and Requirements Group?

19 A Let's see.

20 Q At that time.

21 A Dallas Hicks, Chuck Burke, Jerry Smith,
22 Jerry Slagle, John Mashburn, Vince O'Block, Phil Washer,
23 Doug Hornstra, Bruce Siefken.

24 Q Were you, where were you physically located
25 when you first took that position?

1 A We were in the Hamilton Bank Building. My
2 specific address was 253 Hamilton Bank Building.

3 Q Have you been assigned down at Watts Bar at
4 any time during your period in NSRS, or has it pretty
5 much been up here in Knoxville?

6 A I've been basically located in Knoxville
7 since the inception in '84. I have spent a little bit of
8 time at the sites, mostly in familiarization with
9 features of the plant, training programs for site access,
10 unescorted site access.

11 We initiated in November of '85 an NSRS site
12 representative program, and I did spend a little time at
13 two of the sites, Watts Bar -- I mean, Sequoyah and
14 Browns Ferry with the site representatives that we had at
15 the time.

16 Q Okay.

17 A Since the Office of Power, Nuclear Power's
18 Employee Concern Program site representatives assert most
19 of those site representatives' responsibility that NSRS
20 had, we discontinued the NSRS site representative program
21 in February of '86.

22 Q Who is your current immediate supervisor?

23 A Kermit Whitt.

24 Q And what, who are the employees that are
25 under your supervision right now?

1 A Currently, I don't have anybody under my
 2 immediate supervision. We're in a state of
 3 reorganization, and have been for, since approximately
 4 the first of February. No one is specifically assigned
 5 to work for me.

6 Q How about, say, from at what point in time
 7 did you cease to become the section leader of the TAR
 8 Group and move into a different area of responsibility?

9 A It was approximately June of '85. We were
 10 put in a position of having to reorganize to address all
 11 the issues of the Employee Concern Program, specifically
 12 the Watts Bar Employee Concern Program.

13 And essentially, all the people working for
 14 me at the time were assigned to do investigative work in
 15 the Employee Concern Program.

16 Q So, you were basically supervising the same
 17 group of people when you went into the employee concern
 18 area?

19 A Well, I didn't ever go into the Employee
 20 Concern Program except for a very short stint of about
 21 two weeks.

22 Q Oh, okay.

23 A And we decided to pursue the site
 24 representative program, and I, at that time, separated
 25 from the investigative, or started working on the

1 organization of the site representative program and the
2 Projects and Requirements organization.

3 Q Okay.

4 A Approximately June of '85, the
5 reorganization took the form of a Projects and
6 Requirements Group Branch proposed, and Investigations
7 proposed and a Reviews Branch proposed, which is
8 essentially the pseudo-organization we have now.

9 Q And who was under you?

10 A Nobody is really approved at this point so
11 we don't have an organization per se.

12 Q Who was under you in the Projects and
13 Requirements Group?

14 A There were to be four site representatives,
15 we selected four site representatives and offered
16 positions to four site representatives. Only two of them
17 accept site representatives positions.

18 One we borrowed from the Office of Power to
19 fulfill our need and the other was on a temporary
20 assignments. The one on loan from the Office of Nuclear
21 Power was Paul Border.

22 The other three were NSRS employees, Jerald
23 Brantley, who was located at Watts Bar, Bob Griffin was
24 located at Sequoyah and Tom Newton was located at Browns
25 Ferry. Two of those are currently site representatives

12

1 for the Employee Concern Program.

2 Q Griffin and Brantley are both at Watts Bar
3 now, right?

4 A Right. Griffin is the Office of Nuclear
5 Power site representative for the Employee Concern
6 Program, Brantley is in some special assignment that I'm
7 not really familiar with the details of at this point.

8 Q Border was formerly an NSRS employee?

9 A Border was in NSRS, he worked for Office of
10 Power in many, many different jobs. He's currently
11 assigned in the Division of Quality Assurance in
12 Chattanooga, as I recall. We weren't able to get him
13 released from that to be our site rep, so he --

14 Q Okay. As the section leader of the TARG or
15 the TARS group back from '84 until June of '85, that's
16 about right, what was your understanding of the mission
17 of that group, what were they supposed to accomplish
18 within NSRS?

19 A The simplest way to explain my perception of
20 the Technical Analysis and Requirements Group as compared
21 to, say, the Reviews Group at the time, the Reviews Group
22 tended to deal with operating plant issues, and Technical
23 Analysis and Requirements Group dealt with design issues.

24 Those were, that's as simplified a
25 distinction as I can make. We looked at requirements,

1 assess whether the designs were meeting requirements or
2 not, those kinds of issues.

3 We were responsible for evaluating any new
4 regulatory issues, you know, like draft reg. guides,
5 commenting on those guides, any of the Federal
6 registry-type publications.

7 We were responsible for reviewing any TVA
8 activities around unresolved safety issues, both the
9 generic and the specific issues that had been identified
10 by, I guess AEOD and NRR, who has a whole stack of
11 unresolved safety issues in various states of resolution
12 and depending on where they were, we would evaluate what
13 TVA ought to be doing, and so on.

14 Q AEOD stands for Analysis and Evaluation of
15 Operating Events, operating something or another.

16 Q Is, is that a TVA organization?

17 A No, that's an NRR organization.

18 Q Oh. Okay.

19 A Carl Michaelson used to be the leader of
20 that group of people. He's now in the ACRS. I don't
21 know who currently has AEOD.

22 Q Okay. The work that you were doing along
23 these lines, or that group was doing along these lines,
24 was it pretty much self-initiated, or were you, in other
25 words, were the members of the group looking at these

1 documents and proposed reg. guides, etcetera, and just on
2 their own kind of deciding that this needs looking into,
3 or how was the work distributed?

4 A Well, my initial organizational attempt was
5 to pair people by their engineering discipline or their
6 general experience background, be it mechanical,
7 electrical, system, those kinds of qualifications,
8 figuring to have a primary responsible person for each
9 issue, if you will, and a backup in case that person were
10 off doing something else and we had to have some
11 information on it.

12 It was a mix of self-initiated and specific
13 assignments. We had -- the Federal registry stuff came
14 in fairly regularly and were assigned according to what
15 the subject matter was to some people, various people to
16 comment on.

17 Q Who would make those assignments?

18 A It was basically between myself and Chuck
19 beck. Chuck had the principal responsibility for
20 determining whether we even wanted to comment on
21 something or not, and between us, we would decide who in
22 the NSRS ought to be commenting on it.

23 Q Okay.

24 A He was responsible for preparing the
25 transmittal letters to the nuclear licensing people in

1 Chattanooga for compilation for a TVA position. All of
2 those things had to be approved ultimately by the Board
3 of Directors.

4 The coordination for TVA was done out of the
5 licensing branch in Chattanooga, the Office of Nuclear
6 Power. Everybody provided information to the people in
7 Chattanooga, and, in turn, prepared the letter for the
8 Board of Directors to approve.

9 It would be, the comments would be
10 transmitted to NRC by the, at the time it was Jim
11 Huffham, before Jim Huffham, it was Larry Mills who was
12 the manager of licensing in the Office of Nuclear Power.

13 Q How much direction and guidance were you
14 getting from Newt Culver at the time?

15 A We had a couple of specific assignments from
16 Newt. Pretty much, I was left to my own devices to
17 determine what we wanted to look at. It was a, it was my
18 philosophy at the time, we were all fairly senior
19 managers.

20 No one had less than eight or nine years of
21 nuclear-related experience, and we ought to have been
22 capable of reading documentation, be it from any nuclear
23 source, and assessing independently whether we saw any
24 TVA problems among it.

25 Q And what was --

13

1 A We met with varying degrees of success doing
2 it. Some were good at it and some weren't so good, as
3 one might expect in an organization of eight or nine
4 people.

5 Q What were Culver's yardstick measurements to
6 measure your performance?

7 A Well, the product of NSRS was a report to be
8 prepared by the staff for his signature to some
9 responsible line manager detailing what we had reviewed,
10 what we had found and our recommendations, if there were
11 any.

12 There were no restrictions that we could
13 only have findings that were adverse, we could have made
14 findings that you're doing a great job in this area,
15 you're to be complimented.

16 Never saw any of those, but we could have
17 done so. There were no restrictions. In fact, Newt said
18 on two or three occasions in talking about the different
19 activities with me that we, if we found something good,
20 feel free to document it accordingly.

21 Q Were you satisfied with Newt's involvement
22 in the management activities of NSRS in general and the
23 TARS group, in particular?

24 A I was not unhappy with it. I guess the
25 technical direction that I received from Newt was

1 sufficient for my purposes. There wasn't much of it, but
 2 I don't think we needed that much. We were supposed to
 3 be experts in our specific disciplines, and shouldn't
 4 need, as a staff member, shouldn't need that much
 5 detailed direction.

6 Q Did he appear satisfied with your
 7 performance and the group's performance?

8 A No. I couldn't characterize the performance
 9 of the group as being an overwhelming success.

10 Q Why?

11 A We didn't produce the product, basically.
 12 My performance appraisal and that of the substantial part
 13 of the group reflects, I think, in general what the
 14 quality of our work was at the time. I did one full
 15 year's worth of, basically, really it was eight, nine
 16 months of appraisal for the group.

17 There were two areas of performance that
 18 were put in a superior category. Three, I'm sorry.
 19 Three in the superior and six in the proficient. There
 20 would be those who claim a proficient appraisal was
 21 tantamount to unsatisfactory because it didn't result in
 22 any financial reward, in general.

23 The TVA management appraisal system has a
 24 bias built in built around where you are in a range of
 25 the scale, and if you're above the fifty percent of the

1 range of the M scale that you're on and you receive a
2 proficient rating, you don't get any financial reward for
3 that year in the merit system.

4 So, the people were given proficient, if you
5 read the words of proficient evaluation, it says you're
6 doing everything fine, you're doing exactly what you're
7 supposed to be doing.

8 Q I'm not too worried about the specifics of
9 the performance appraisals right now. Did you feel that
10 your group was performing their function for you?

11 A I felt that there were three people.

12 Q Who were doing an excellent --

13 A Who I felt were doing a very good job. I
14 felt that there was one, maybe two in the proficient
15 group who were doing better than the average of the
16 proficient, and the remainder I felt were not doing an
17 adequate job.

18 It was, well, not adequate, adequate is not
19 the right word to describe it. They were not doing a job
20 that would have the group survive the rigors of
21 organization, reorganization.

22 Q And when you say not doing a good job, were
23 they just not, nonproductive, or were they bad report
24 writers or were they illogical gatherers of data, or was
25 it just that they weren't doing anything?

1 A There was a little of all. Since our
2 product, to demonstrate what we were doing was a written
3 report, or letter, if one was not producing such a
4 letter, or such a report, then he wasn't doing the
5 complete job.

6 There were a number of people who were
7 capable of identifying issues that, for whatever their
8 reasons, never reduced it to the written word, and the
9 general criticism by many in management and by myself was
10 that we've got to put it in writing, and I was unable to
11 deliver it in writing, and, therefore, I was a failure
12 and they were a failure.

13 Q Okay. All right. Do you feel that you
14 personally were judged as a failure? I'll be very fair
15 with you.

16 A In the Technical Analysis and Requirements
17 area?

18 A Yes.

19 A I was unable to make a fully productive
20 group from that nine set of people.

21 Q So, you feel --

22 A Nine individuals.

23 Q So you feel that maybe that Culver's
24 analysis of your performance was correct?

25 A Basically, yes.

14

1 Q You don't disagree with it?

2 A I don't disagree. If I was in his position
3 having to judge my performance as a member of the
4 Technical Analysis and Requirements Group, I would say we
5 didn't do what our charter was to do.

6 Q That's really not, I don't know how we got
7 into this so deeply, that's not really the point of my
8 interview. I've got a couple of specific items that I
9 wanted to talk about --

10 MR. WINDT: Since you did get into it, I'd
11 like to --

12 MR. ROBINSON: Sure, follow-up.

13 BY MR. WINDT:

14 Q Which individuals would you classify as
15 being superior or proficient or people, maybe average or
16 proficient or whatever your terminology was, of those
17 nine individuals?

18 A Well, the performance appraisals are a
19 matter of record. I had a superior performance on the
20 part of () And
21 (the remainder) were all proficient.

22 And the varying levels of proficiency tended
23 to be along the lines of how much experience they had.
24 My basic conclusion was that we probably didn't have
25 enough experience in the group as a whole to do the

1 charter that we were given to do.

2 In other words, the minimum qualification
3 for an M-5 is supposed to be something like seven or
4 eight years of experience.

5 For someone to take an independent set of
6 facts and conclude whether it was a design, construction,
7 operating problem, one at age thirty-five probably
8 doesn't have enough experience to make those kinds of
9 judgments, and pursue it with vigor against a couple of
10 hundred line organization managers who are saying
11 everything is great.

12 BY MR. ROBINSON:

13 Q Who were the two that were on the low end on
14 the proficient scale?

15 A [redacted] was one of them. That's a
16 dichotomy, in that he had a large number of years of
17 experience. I had a great deal of difficulty
18 communicating with [redacted] and I think the record in
19 management appraisal system reflects that. He and I
20 didn't agree on a large number of issues.

21 I would say the other one is true to form.
22 [redacted] and
23 probably had the least proficient of the proficient. I'd
24 say the graduation from the proficient wasn't really
25 that great.

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1 None of them did tremendously well, so the
2 graduation in the proficient rating wasn't really
3 substantial.

4 Q And when you talk about what the group was
5 chartered to do, that charter was kind of irrelevant own
6 creation, right?

7 A Yes.

8 Q How much guidance did you get from Culver as
9 to what your chartered to do?

10 A I got the words that were in my position
11 description.

12 Q Okay.

13 A I felt that to be adequate. I think I
14 understood what we should have be doing. My failure
15 probably was not in doing an effective job of
16 communicating that to all the various members of the
17 group. Some needed more guidance than others.

18 It was very easy to deal with the superior
19 people. They just go off and do it. In the proficient
20 ranks, sometimes I would talk and nothing happened, and I
21 couldn't understand why nothing happened.

22 Q Okay. Any other follow-up questions that
23 either of you have regarding that?

24 Okay. I want to get into the NSRS review of
25 Black & Veatch.

1 A Okay.

2 Q How did the TARS group get that assignment?

3 A TVA had a policy committee that was
4 overseeing the total Black & Veatch study. Newt Culver
5 was a member of the policy committee. It was composed
6 basically of the senior member of TVA staff, the Director
7 of Engineer, Gray Beasley. I forget what his specific
8 title at the time was.

9 Dwight Patterson, Chuck Bonine, those, all
10 fairly very, very senior people in TVA. Top level
11 managers were in the policy committee. They had selected
12 a task force to do certain things with the Black & Veatch
13 activity, which involved categorizing all the different
14 findings into root cause analysis and having certain line
15 organization evaluations done.

16 The Task force report had been written in
17 draft form, and the policy committee was looking for some
18 documentation to transmit to NRC to document the results
19 of the activity, Black & Veatch activity.

20 We were to review the task force work in
21 order to support Newt Culver's signature on the policy
22 committee report which would be the vehicle to provide
23 our conclusions to NRC.

24 Q Is that how Newt explained the project to
25 you, or is that just kind of your explanation of the

15

1 project? How did you get, kind of give me a synopsis of
2 the meeting when you got the assignment to do that job.

3 A That was basically the way it came out.

4 Q Okay.

5 A Newt had a copy of the task force report,
6 and we knew that he was going to have to sign the policy
7 committee report, which was going to have a cover letter
8 and some summary statements, and then be attached to the
9 task force report.

10 Q Is the task force report separate from the
11 policy committee report?

12 A Oh, yes.

13 Q Or are they one in the same?

14 A No, they are separate.

15 Q That's the policy committee report
16 (indicating), right?

17 A Yes.

18 Q All right. Newt didn't have that at the
19 time he first came to you?

20 A No. No. He did not have that. What he had
21 when he first came to me was the task force report.

22 Q Okay. And the task force reported is not
23 incorporated into that at the policy committee?

24 A No.

25 Q Isn't there a breakdown of the categories in

1 that policy?

2 A There are bits and pieces of the task force
3 report. For example, Appendix D of the policy committee
4 report is a table that probably does, as far as I can
5 tell, is a reproduction of a table that was in the task
6 force report, for example.

7 There are other things that have been
8 summarized from the task force report that becomes the
9 policy committee report.

10 Q Okay.

11 A In other words, they've basically abstracted
12 the principal conclusions of the task force activity to
13 make the policy committee report.

14 They combined that with an oral
15 presentation, view graphs, to make their presentation to
16 the NRC in roughly April of '84.

17 Q Okay. But Newt had the task force report
18 when he's talking to you?

19 A Right, in draft form.

20 Q And his comments were for your --

21 A Basically to review this and see what you
22 think of it. Can you so support it? Does it have the
23 right conclusion in it, did they do the right amount of
24 work, did they evaluate it with a critical eye, you know,
25 all those things that make for technical competency.

1 Q And what did you do? How did you undertake
2 that task?

3 A There were roughly twenty-five, twenty-seven
4 categories of findings. I separated those by engineering
5 discipline, electrical, mechanical, civil, structural and
6 so forth, and I assigned them to pairs of people or staff
7 members in my group.

8 They were to review them to see if they had
9 any difficulties with the conclusions that the line
10 organization was reaching. Any disagreements, so forth,
11 they were to accordingly document and provide in writing
12 to me.

13 Q How long were you given by Culver to come up
14 with some results?

15 A There were no specific time assignments
16 given. It was just review it post-haste. We were
17 working on roughly a two-week time scale to get our
18 initial assessment done.

19 Q Okay. That two-week time scale was kind of
20 your thinking more than --

21 A Well, he had, although he didn't say you had
22 to get a total thing, he was targeting -- the policy
23 committee at that time was trying to get a document out
24 in a couple of weeks.

25 So, we had to do it in order to support his

1 signature, we would need to, at least have our evaluation
2 done. A report, as such, was not really discussed at
3 that point.

4 Q Okay.

5 A It was only after we had done enough review
6 of the task force activity, the Black & Veatch activity
7 as a whole did we conclude that it was worthy of a
8 report, and that's, in essence, the fall from the
9 feedback, the written feedback from each of the staff
10 members.

11 Q Now, I want you to feel free to make extra
12 clarifying comments as you go along, but between the time
13 you were assigned the project and the time that Newt
14 signed that policy committee report, okay, what type of
15 input did you give to Newt about what your group was
16 finding?

17 A We would, it was a continuous interaction.

18 Q Between you and Newt?

19 A Between myself and the staff and between
20 myself and Newt. Any time one of them ran across some
21 anomaly that he was pursuing, I would inform Newt that we
22 were running into a little difficultt here, or things
23 looked good here, those kinds of interactions.

24 Q Mostly verbal?

25 A It was all verbal. It was no written at

1 that point.

2 Q Okay,

3 A In fact, up until the time that he signed
4 the report, to my recollection, there was no written
5 report to him. It was all verbal.

6 Q Were there any -- was there kind of a log or
7 a daily, almost a daily log of results of work in a
8 handwritten form that was done by anyone, or that Newt
9 had privy to?

10 A Not that I'm aware of.

11 Q Okay.

12 A I'm sure that each person had his own style
13 as to how he documented what he was doing. The final
14 product, to me, was done category by category, a
15 description of what the category was all about, what
16 findings had been grouped in that, whether we agreed with
17 the grouping, whether we agreed with the categorization,
18 the root cause analysis.

19 Some seven, I believe, they had, the task
20 force had determined that TVA had not met the licensing
21 basis, not only had they not met their PSAR commitment,
22 they had not met the licensing basis.

23 They did what they call a safety evaluation
24 to determine if the plant would have been in deep
25 straights if something had happened, if we had not

1 corrected that particular deficiency, what would have
2 been the condition of the plant.

3 Q This was done prior to him signing this
4 report?

5 A Yes.

6 Q Okay.

7 A And we had reviewed those, we had not
8 documented our review in a written form by that point.

9 Q Right.

10 A By the time he signed this policy committee
11 report.

12 Q Based on the input that you got from your
13 section, what were your recommendations to Newt about the
14 policy committee report? Had you seen the draft policy
15 committee?

16 A I had personally seen the draft policy
17 committee report, and I had read and commented on the
18 draft policy committee report. In fact, there was one
19 particular portion of the policy committee report that I
20 personally wrote.

21 Q Five-paragraph page? That might be it right
22 there (indicating). That's not it?

23 A Let me see. I believe -- just a minute.
24 Well, let me back up to say what Newt expressed to me a
25 principal reason for the Black & Veatch review.

1 Q Okay.

2 A Since I don't think anyone would maintain
3 that there's a perfect nuclear plant out there anywhere,
4 one would like to be assured that if he did a total
5 review of each and every little nit and nat of the plant,
6 that he would never find anything serious enough to
7 challenge the safety of the plant.

8 By safety, I'm talking in terms of the
9 normal engineered safety feature-type thought processes,
10 that you would challenge any of those kinds of things,
11 that core would never be in danger and people's lives,
12 exposures and site boundaries, all those kinds of thought
13 would be all right.

14 Since there had been a substantial,
15 admittedly substantial breakdown in TVA's quality
16 assurance programs, one has to say, was being asked at
17 that time, in view of those breakdowns, what can you,
18 what assurances can you give us, NRC, that would lead us
19 to say, even in spite of those programmatic breakdowns
20 that your plant is okay? That's what led to the Black &
21 Veatch review in the first place.

22 There had been a number of programmatic
23 reviews of TVA's ways of doing business, and they had
24 found a number of problems, and TVA had taken a lot of
25 corrective actions to fix some of those deficiencies.

1 All the time they are having these
 2 deficiencies, they're designing and building and so forth
 3 the plant. You got say what's the final product of the
 4 plant. This led to the independent design review
 5 requirement.

6 We did a vertical review, vertical slice of
 7 the plant, which is what we called the Black & Veatch
 8 review, which was to be a sampling of everything it takes
 9 to build the plant.

10 They chose the auxillary feedwater system
 11 because it covered a wide range of design and interface
 12 type issues.

13 Now, since there were a substantial numbers
 14 of findings by Black & Veatch that we had not met our
 15 FSAR commitments, one has to ask the question, what's the
 16 significance of those findings.

17

17 This led to, then, a question, was there
 18 anything that if we hadn't fixed, hadn't found it, hadn't
 19 fixed it, that the plant would have been unsafe.

20 And in the executive summary on page two,
 21 paragraph four, item four, says that evaluations were
 22 performed for those deviations from the licensing basis.

23 These analyses indicate that had these
 24 deviations not been identified, and corrective action not
 25 taken, there is no direct indication that the affected

1 structure system or component would not have performed
2 its safety function.

3 Q You authored that?

4 A I wrote that paragraph. I was, it was a
5 considerably different set of words there, I don't recall
6 what that set of words were, but I wrote those words,
7 because that was the conclusion I was reaching from what
8 my group was telling me.

9 A Now, we didn't do a Chapter 15 safety
10 evaluation. We didn't go through all the single failure
11 analysis and all the loss of site power, the conditions
12 that one does a Chapter 15 analysis on. In reality, we
13 did an engineer evaluation that said what's the
14 importance of this particular feature that has a
15 deficiency in it, and if you hadn't discovered that
16 deficiency, what would have happened to the plant.

17 I've reached that conclusion from that kind
18 of a thought process. That doesn't mean that I was happy
19 with the quality of work that they did in TVA. I think
20 there was a hundred and seventy-odd deficiencies that
21 everybody agreed were things that had to be fixed.

22 Out of the activity, I think there was
23 something like twenty-seven nonperformance reports
24 written. So, it says that the Black & Veatch activity
25 was needed to help us have a good plant.

1 What it said, though, if we hadn't done the
2 Black & Veatch review, the plant would still have
3 operated, it just wouldn't have had the margin that it
4 has now.

5 Q Did you feel any direct or indirect pressure
6 to make a positive statement like that? And that is a
7 positive statement to a reader, obviously to a reader,
8 obviously, none of the safety features would have failed
9 if we hadn't found, as opposed to a more negative
10 statement with respect to margins, etcetera.

11 Did you feel any pressure to compose that
12 statement in a positive manner as opposed to a negative
13 manner by Culver or by anyone else?

14 A No, I -- in my whole career, I tell things
15 the way I see them, and I can't say that everyone always
16 agrees with me. I have my own logic and those are my
17 words, and I, to this day, believe strongly in that set
18 of words.

19 The nature of the Black & Veatch identified
20 deficiencies were not in the primary functions of the
21 hardware.

22 To give you an example of what I mean by
23 that, we have thermal overloads on motors, or safety
24 devices on motors to protect the equipment. During an
25 abnormal event, even a design basis event, there's

1 provisions in the plant to by-pass those protective
2 devices so that, you know, if you're going, if the plant
3 is on the verge of going to hell in a hay wagon, one
4 doesn't really care whether you burn up a motor or score
5 a bearing on a pump or something, you by-pass those
6 protective devices.

7 Some of the ways in which TVA did those
8 secondary backup pieces of the design didn't meet the
9 industry standards. And unless the primary piece of
10 equipment was failing, that backup piece of equipment
11 wouldn't have even entered into the story.

12 So, in my mind, that has to do with margin,
13 not with the primary safety function.

14 Q Okay.

15 A It doesn't mean those things aren't needed,
16 it just means you're already in an abnormal state, and
17 you don't really care whether that piece of equipment
18 burns up or not.

19 Now, during normal operation you're very
20 much interested for reliability reasons in that piece of
21 equipment being there to protect your motors, you know,
22 overload protections, relaying that sequences things to
23 various and sundry other pieces of activities like system
24 related work where those features weren't always designed
25 the way we said we were going to design them.

1 Q Did, at the time you drafted that paragraph,
2 did you have any strong objections from the members of
3 your group about the wording of that paragraph, or did
4 you even take that to them?

5 A I didn't really particularly take it to them
6 in the first place. I told them what I was doing. I
7 guess at the time, there, there may have been one or two
8 that -- I'm specifically aware of one who expressed some
9 concern that that really didn't tell the whole story. My
10 reaction was, well, bring me some information that says
11 something to the contrary.

12 Q Was this Washer?

13 A No, this was Dallas Hicks.

14 Q And what was his response to bringing you
15 information?

16 A I got nothing else, and, in the absence of
17 being brought anything else, I said I'll go with what
18 I've got.

19 Q Did you get any indication that he was
20 developing this information after you had talked to him
21 about it, or did you? --

22 A No.

23 Q Did you follow-up on it with him? Did you
24 say, yeah, did you ever find that?

25 A No, Dallas left very shortly thereafter, and

1 he did, at my request, as he was leaving, develop a list
2 of things that he thought that our group ought to be
3 looking into.

4 Problems, design issues in TVA, design
5 construction related issues that he felt strongly that
6 TVA was deficient in and left that with us.

7 That list became an attachment to a 1985
8 letter from NRR that said, oh, by the way, here's a list
9 of things we got from somebody, why don't you tell us
10 about the significance of these while you're at it.

11 They are currently the subject of a
12 substantial amount of investigation within NSRS
13 investigations branch. Principally, they were
14 electrical-related design issues.

15 Q This is a copy of the final NSRS report
16 (indicating).

17 A Right.

18 Q On Black & Veatch. Do you find any problems
19 with differences in that policy committee response and
20 that report? In other words, does that report conflict
21 with what is said in that policy committee report in your
22 mind?

23 A It doesn't in my mind, no.

24 Q Okay. Is there any significance to the fact
25 that that report was not signed by all the members of

1 your team?

2 A No, not really. I guess I was unfamiliar
3 with the reporting practices of NSRS, who ought to be
4 preparing and signing and how those things should be
5 done.

6 Since there was such a complex set of
7 disciplines involved, there really wasn't any single
8 person in NSRS that I felt comfortable, that had the
9 capability of pulling the whole story together,
10 understanding it and documenting the TARG position on the
11 Black & Veatch activity.

12 I took the input from each person, read,
13 understood to the best of my ability, translated it into
14 my words, wrote a draft report, gave the draft report to
15 the members of the group for their review to see if I had
16 translated their story into my words and lost nothing in
17 the translation, and what I got back from them was
18 editorial comments.

19 Q No substantive change?

20 A I don't recall any substantive comments in
21 translating their story into my story.

22 Q Okay.

23 A The draft report I provided to Newt Culver
24 for his review at that point. There were a large number
25 of comments, and it's nothing unusual in NSRS to have a

1 lot of comments in going from draft stage to the final
2 report.

3 Q What kind of comments did Culver make on
4 that draft report, were there substantive comments or
5 editorial comments?

6 A They were substantive, and in retrospect,
7 there were points in the report where we had not lucidly
8 made our story.

9 Trying to put yourself in the position of a
10 line organization manager receiving such a report, what
11 do you do it with it, is it written in such a way that
12 you understand what the issue is?

13 And, so -- and I think most of his comments
14 were seeking more information about the particular point
15 we were trying to make.

16 In some instances, I was able to provide the
17 additional information, some instances I was not. In
18 those instances where I couldn't support the case we were
19 trying to make, those were modified to some way or
20 another so that they stated the case that we could
21 support.

22 Q Was there ever, did you ever have any
23 indication that your reports should not be going to line
24 people, and that they should be going to the Board
25 through the General Manager, or was it your thought that

1 since you first came with NSRS, that the normal report
2 distribution is to the applicable line managers that --

3 A It was always my conclusion from the day I
4 arrived that you wrote the report to the person that had
5 responsibility for resolving the issue you identified.

6 Q Okay.

7 A The Board and General Manager always
8 received copies of your report, regardless, to the best
9 of my knowledge, because we certainly, from time to time,
10 received questions from the Board that we had to address
11 separately.

12 Q Okay. If you notice, the TVA policy
13 committee report, I note you kind of think, or you had
14 reason to believe that the reason for the independent
15 design review was to kind of present a story to NRC,
16 although the policy committee report was addressed
17 intentionally to the office of engineer?

18 A Yes. And the reasoning for that is the
19 mechanism by when -- and by the way, John Raulston wasn't
20 Chief of the Mechanical Engineering Branch, he was Chief
21 of the Nuclear Engineering Branch.

22 There is a licensing function in the
23 engineering offices, Nuclear Engineering Branch. They
24 prepared transmittals to NRC.

25 Q Did they? In this case, do you think, do

1 you know they did?

2 A I don't know for a fact but I'm pretty sure,
3 the normal way the documentation got from engineering to
4 NRC is via Chattanooga. It originates in some line
5 function in Engineering, it goes through the Nuclear
6 Engineering Branch. They prepare whatever caveats go
7 over those kinds of transmittals, then it goes to
8 Chattanooga.

9 And the licensing people in Chattanooga are
10 charged, since they are the licensee recognized by NRC,
11 the communication goes from Chattanooga to NRC, not from
12 Knoxville to NRC, in general.

13 So, the reason it was addressed, this
14 particular report was addressed to John Raulston was, he
15 was the Chief of the Nuclear Engineering Branch who is
16 charged with preparing that kind of documentation.

17 It's my recollection that a meeting, roughly
18 April of '85, '84, I'm sorry, was held, and this report
19 was given to NRC.

20 I don't recall at this point, whether it was
21 a cover type letter prepared by the licensing people in
22 Chattanooga or not.

23 Q Okay.

24 A At that point, there really wasn't very much
25 interest in the whole activity. TVA took a whole army of

1 people to NRR for a presentation, and the feedback I got,
2 I wasn't in the group that went to NRC at the time, the
3 feedback I got was that there were virtually no interest
4 from NRR in the report to the degree that more than one
5 NRC manager left the meeting before it was over.

6 I thought it a bit strange myself at the
7 time, but, you know, if they are happy with the TVA
8 program, they're happy with the TVA program. Far be it
9 for me to tell the NRC they had to sit a whole day and
10 listen to our presentation.

11 Q Do you think that NRC would have concluded
12 from that report, that policy committee report, that
13 there were no safety margin problems, putting yourself in
14 the position of NRC and objectively reading that report?

15 A I think if I were an NRC person reviewing
16 the policy committee report, I would conclude that TVA
17 had a program that delivered a plant that met the
18 fundamental safety requirements.. That they had a large
19 number of deficiencies in their program, which they had
20 subsequently corrected as a result of doing generic
21 reviews of the applicability of the findings, and that
22 they basically had an acceptable nuclear plant.

23 BY MR. WINDT:

24 Q That policy committee report, was it the
25 objective of that, the whole objective of that to give a

1 positive impression of TVA because of the Black & Veatch
2 findings and a more or less refute to those findings?

3 A I don't think it was to refute the findings.

4 Q Let's say gloss over them, then.

5 A I don't think it was to gloss over them, I
6 think if I recall, it's stretching my memory a bit, they
7 detailed quite extensively. There were initially four
8 hundred twenty-eight Black & Veatch findings which got
9 negotiated, if you will.

10 Negotiation isn't exactly the word. They
11 were discussed in written form. Over half of them were
12 items which were items that were not through construction
13 yet.

14 And TVA's position was, if we made it
15 through the rest of the construction program and we had
16 signed off on it and you found the deficiency you have a
17 valid deficiency but still it's in process, it's not a
18 valid deficiency yet.

19 Q What I'm saying --

20 A So, about half of them went away. The
21 other, there was like, as I recall, a hundred seventy-odd
22 findings that were substantiated, if you will. They were
23 accepted by TVA as being deficient.

24 In those particular areas.. They spent
25 months and months, close to two years, as I recall,

20

1 taking corrective actions, doing generic reviews, doing
 2 evaluations of significance, processing some
 3 twenty-seven, as I recall there are, nonconforming
 4 condition reports to fix those deficiencies.

5 And the policy committee report, as I recall
 6 it to be simply a discussion of that complete activity in
 7 a summary form, and to reach some bottom line conclusions
 8 of the significance of that activity.

9 Q Well, I mean by reading that, though, the
 10 bottom line conclusion is to come out with something that
 11 looks a lot more positive for TVA than what we had before
 12 like under the Black & Veatch report.

13 A I don't mind.

14 Q What I'm asking is, wasn't that the kind of
 15 the understanding by the TVA management? I'm not saying
 16 that was, I'm asking if that was.

17 A I don't believe it was.

18 Q You never heard that?

19 A I believe that was an honest attempt to tell
 20 the story the way it was.

21 Q You never heard that from anybody, then?

22 A No, I didn't hear it. We've always had
 23 difficulty communicating with the line organization from
 24 NSRS in making them understand or see from our
 25 perspective what we see the issues to be. And I can

1 understand someone saying that the policy committee
2 report was an attempt to gloss over the issues.

3 Q I'm not saying that anybody said that, but
4 I'm asking that, really.

5 A From my perspective, it wasn't. I can't
6 speak for anyone other than myself. I don't believe that
7 it was Newt Culver's perspective, or he wouldn't have
8 signed the report.

9 BY MR. ROBINSON:

10 Q I guess the basic question is, if TVA
11 contracted Black & Veatch to do an independent design
12 review of the aux. feedwater system, and they took their
13 vertical slice and they came up with their findings, why
14 wasn't TVA satisfied that this was an independent review
15 and present those findings to the NRC?

16 A Those finding were presented to the NRC.
17 Black & Veatch wrote a report. A report was provided to
18 NRC and the world that had the four hundred and
19 twenty-eight observations in it.

20 They had gone so far as to document things
21 as being resolved or unresolved, and I forget all the
22 words that were used. NRC was not happy with the high
23 number of, quote, unresolved issues.

24 TVA and Black & Veatch were given
25 instructions by NRC to come back with no unresolved

1 issues. They changed the definition of resolution a
2 little bit. Some people would say a whole lot.

3 And Black & Veatch wrote a supplemental
4 report that had, as I recall, three open items, and they
5 are discussed specifically in the policy committee
6 report.

7 One of them had to do with spectrum
8 broadening for seismic analysis. One had to do with a
9 factor of safety on anchorages for support systems. I
10 don't recall the details of the others, but there were
11 like three or four of them from before, and TVA would not
12 agree that there was or wasn't a deficiency ultimately.

13 Q This is in the Black & Veatch supplemental
14 report?

15 A In the supplement report, right. There was,
16 as I noted, the change in definition of resolution. The
17 change in definition of resolution went something like
18 this.

19 The earlier definition of resolution was
20 that TVA proposed corrective action, and, as I recall,
21 Black & Veatch accepted that at that time corrective
22 action would fix the problem, or something to that
23 effect.

24 The last definition of resolution was TVA
25 agreed there had been a deviation and they were going to

1 fix it. That made it resolved, as far as the Black &
2 Veatch review was concerned.

3 I forget how many, there was a fair number
4 of open items that, or unresolved items that were moved
5 into the resolved category.

6 Q Do you think NRC was advised of the change
7 in definition?

8 A It was written. The definitions were
9 provided in the supplemental report, which was also
10 provided to NRC.

11 BY MR. KINDT:

12 Q Did everybody want to kind of, let's resolve
13 these things, get them taken care of in whatever way we
14 can? I mean, if that means changing the definition?

15 A If I was looking in the -- well, back up.
16 Black & Veatch's responsibility was to identify the
17 issues, not to identify corrective actions.

18 So, long as TVA agreed that they hadn't met
19 their commitment and were going to fix it as far as
20 before was concerned, that should have been the end of
21 it.

22 TVA had responsibility as licensee to fix
23 anything that was wrong and convince NRC that they had
24 done the job with integrity, and that's in the
25 supplemental report, that was the approach that was

1 taken, which was quite appropriate to me.

2 It did give some people pause to comment
3 that they resolved it by changing the definition of
4 resolution. And to me, that's only important if they
5 didn't fix them ultimately.

6 And I concluded that, to the best of your
7 ability to determine it, they had fixed everything that
8 Black & Veatch identified.

9 Those areas of technical disagreement and
10 where TVA was not ready to admit that they had a
11 deviation, and Black & Veatch didn't have the freedom or
12 didn't feel they wanted to define that they had met the
13 requirement after all their discussions. Then those were
14 the ones that ended up in the policy committee report and
15 reported specifically to NRC with the position identified
16 as to why they thought they were technically acceptable.

17 One of them as I recall specifically, NRC
18 told TVA your resolution is unacceptable. That involved
19 the factor of safety on the anchor bolts and that these
20 were the anchorages into expansion anchor rings into the
21 concrete.

22 TVA's factor of safety was something like
23 4.2 on the average for a fair number of the bolts, just a
24 little over 4. The requirement in the code was a factor
25 of 5.

4 And as I recall, the final commitment made
5 from TVA to the NRC was that by the end of the first
6 refueling, TVA would have sharpened all the pencils and
7 the factor of safety would be demonstrated for all
8 anchorages to be 5, a minimum of 5, which was the code
9 requirement. As far as I know, they are implemented
10 that.

11 BY MR. ROBINSON:

12 Q Sharpened all the pencils rather than
13 changing the anchorage situation?

14 A Well, that can be. The way one does
15 arithmetic in designing a nuclear plant, there's
16 substantial amounts of margin in the way one goes about
17 making assumptions. You can make very conservative
18 assumptions and the answers comes out okay. You meet all
19 your allowables, then you don't do any more.

20 BY MR. KINDT:

21 Q That's what you're -- you're kind of hitting
22 on what I was asking about this policy committee report,
23 the same kind of thing. In other words, tone it down.
24 Let's not have all these violations and all this coming
25 across. Let's tone it down and look at it in another
perspective.

I'm not saying that maybe the -- that was
initially the whole goal, but after they saw that Black &

1 Veatch finding maybe they felt they should tone it down.
2 I don't know that, but I'm asking that.

3 A Well, let me give you my perspective on the
4 the design construction interaction. The designer
5 specifies a plant. He's gone through a whole myriad of
6 arithmetic, analyses, developed a set of specifications
7 for how the plant ought to be built.

8 For economic reasons, one makes all kinds of
9 assumptions in doing that to make the job flow quicker,
10 even though the degree of conservatism is fairly
11 substantial in that kind of approach.

12 You envelope transients, take less severe
13 transients and envelope them under more severe transients
14 and increase the number of the transients to account for.

15 Instead of doing unique analyses for each
16 and every support, you may take the most severe support
17 condition and multiply it by 100 and apply that design
18 100 times, when only one of them may be challenged by the
19 design conditions. Those are called typical designs.
20 There's nothing wrong with that process.

21 Now, a constructor goes down and starts to
22 build a plant. He gets up against a hard spot on that
23 particular design of a support, it won't fit the location
24 that he has to put it. Somebody has to redesign.

25 Sometimes the construction people make

3

1 modifications to the supports. You end up with
 2 nonconforming conditions. Those nonconforming conditions
 3 have to be evaluated against the requirements of that
 4 specific location.

5 There's absolutely nothing wrong with them
 6 sharpening the pencil saying the there isn't \$100,000,
 7 it's really \$10,000, and, therefore, I don't need that
 8 strut or that piece of structural steel at that location,
 9 I eliminate it and it's fine.

10 That's a standard way everybody does
 11 business, and the only people who can make those kinds of
 12 determinations of acceptability is the engineer that
 13 designed it in the first place, or someone who has
 14 delegated that authority who has the competency to make
 15 those kinds of determinations. TVA does that, everybody
 16 does it.

17 Now, identifying the Black & Veatch
 18 deviations from commitments, one has to say in evaluating
 19 those deficiencies, do I, did I really have to do it that
 20 way to meet the basic design requirement? And that was
 21 the process of evaluation that TVA went through.

22 In the cases of the factors of safety, TVA's
 23 initial push, rather than to do all those additional
 24 analyses was to say, well, the factor of safety is 4.2 or
 25 point 4.1 or whatever is sufficient.

1 NRC didn't agree, so they have to go back to
2 each and every support location where they don't meet the
3 factor of safety of 5, evaluate it a little bit more
4 rigorously to a more realistic set of conditions and see
5 what the real factor of safety is.

6 Q And it wouldn't surprise me that all of them
7 would come out at least a factor safety of 5, because I
8 know how much conservatism is entailed in a fair number
9 of those typical support designs.

10 Given a two hundred foot run of pipe, there
11 may be only one or two locations of supports that are
12 challenged to any degree. Yet, the whole run of pipe may
13 have the same supports every ten or fifteen feet.

14 Q One other question. On your report on this,
15 the NSRS, when you got that into final form, and maybe I
16 missed this, so bear with me because I missed it, but did
17 you run that by your staff, then, after you got that into
18 final form to see what they thought of it?

19 A I did those instances where we had
20 substantially modified that person's initial input. They
21 weren't all happy with that, with those modifications.

22 Q Who and what modifications, can you identify
23 those from your best recollection?

24 A Oh, there was a group of supplemental, in
25 other words, we had a group of six or seven findings that

1 were very specific, and then we had some broader brush
2 things that went something like, you got a sorry
3 configuration, management system, you ought to do this,
4 that or the other with the management configuration
5 system, those kind of observations, nonspecific findings.

6 The people that had those recommendations
7 still felt that those were substantial problems, and I
8 agreed, that they were problems that needed resolution.
9 Some of them still need resolution.

10 Did they impact the immediate safety of the
11 plant, I concluded they didn't, and still conclude that
12 they don't.

13 They impact one's ability to say at any
14 point in time, you know, how much he knows about the
15 plant, but to meet a minimum cut set of requirements, I
16 think they probably do.

17 Q Did they maintain, though, that they did
18 impact the safety of the plant continually?

19 A I don't know that it was stated exactly that
20 way, but these are things TVA ought to be doing because a
21 lot of other people in the industry do them.

22 BY MR. ROBINSON:

23 Q Who were the people that had the problem?

24 A Dallas Hicks was one that had substantial
25 problem with that.

1 Q Did he -- and they had problems with the
2 broad brush recommendations as opposed to the specific
3 recommendations?

4 A I think substantially, the specific
5 recommendations were included pretty much religiously. I
6 have a copy of the initial draft report, and I've gone
7 back a couple of times since then and I made a
8 presentation in 1985, about May, June time of '85 that,
9 and -- yes, that was the draft.

10 Q Okay.

11 A Right. And, there's a dressing up of the
12 English in it, but, and some of the points are a little
13 bit clearer made, but I think basically --

14 Q I think I may run some check marks check
15 marks by recommendations that were in this draft that
16 were not in the final report. Go back to the portion on
17 recommendations. I guess that's III?

18 A Right.

19 Q The first one is a Category III?

20 A Category III, right.

21 Q Second one is a Category IX?

22 A Right. Third one is Category IX.

23 Q Okay. There's a Category XI here, and it's
24 obviously, at this point, a very general statement, the
25 impact of the potential leaking relief valve flange on

4

1 surrounding equipment and impact on flow in the system
2 should be evaluated and documented.

3 A That was a comment by Doug Hornstra, and on
4 further evaluation, he concluded that that impact was
5 relatively minor and not worthy of making any additional
6 analysis for them.

7 Q Okay. Then the next one down that I have a
8 check mark next to, okay, that was not included?

9 A The Category XI, out of function features.
10 The out of function features was combined into the
11 Category III recommendation, which deals with having
12 incorrect information on a set of drawings.

13 The out of function feature is something one
14 puts on a drawing that gives a shadow picture of
15 something that interfaces with the principal information
16 that being presented on a drawing, like a pump or
17 whatever.

18 They vary in detail as to what some people
19 put on them. One doesn't, TVA was not controlling the
20 information that was in those out of function features.

21 Black & Veatch critiqued that and said you
22 shouldn't do that. We agreed with Black & Veatch. TVA
23 said it doesn't matter, because nobody uses that out of
24 function information for anything. Our point was, you
25 shouldn't have incorrect information on a document in any

1 case.

2 So, our conclusion and our recommendation
3 came down to all control documentation ought to be
4 identified, and we ought to make sure that all the
5 information on those control documents is maintained and
6 controlled and that it is correct.

7 So, we did say, and we said, well, if you
8 don't need the information to build a plant, then you
9 ought not have it on the document, take it off.

10 It wasn't our intent they go through all the
11 check marks and snow flake out everything they needed to
12 build a plant, but the next time you go through a
13 revision of the drawings or documents, you ought to
14 reevaluate whether you really want the information on the
15 document or not or whether you really need it.

16 I think I substantially agreed with it, once
17 we discussed what we were really recommending. They
18 thought initially that we were recommending that they
19 ought to embark upon a massive program of reviewing all
20 the engineering documentation in TVA, and going through
21 at least one more revision to delete all incorrect
22 information.

23 That wasn't our intent from the beginning,
24 strictly don't put information on drawings you don't need
25 that doesn't need to be on the drawings. So, at that

1 particular, initial finding, if you will, was
2 incorporated in an earlier one that was very much
3 related.

4 Q Do you feel that the main problem that
5 existed in the mind of your TARS group was a definition
6 of safety, safety related, between what, how safety was
7 referred to in that policy committee report, as opposed
8 to the classic NRC definition of safety related?

9 Were any of their concerns valid in your
10 mind that items that should be included -- I mean, the
11 word "whitewash" came up. Are you familiar with Phil
12 Washer's confrontation with Culver, right?

13 Washer was writing a draft cover letter for
14 Culver, and he made some kind of a comment in the draft
15 cover letter about this whole thing being a whitewash,
16 okay? And there was discussion between the two of them.

17 Did you ever talk to Washer about that?

18 A There was a feeling in the Technical
19 Analysis and Requirements Group that TVA had not done a
20 very good job of designing and building its nuclear
21 plants, but that's about the end of the information.

22 Q Oh.

23 A It's liking it to my telling you that your
24 1983 or 1982 whatever the initial Oldsmobile diesel was
25 from General Motors that kept blowing up, if I came and

1 said those early Oldsmobile diesels aren't worth a
2 tinker's damn, what good does that do with your having a
3 battle with General Motors to get it fixed?

4 But if I come in and tell you that the
5 reason was they took an old 350 block and beefed up the
6 heads a little bit, left the bottom side of the engine
7 unchanged and buttoned it up and called it a diesel, and
8 when you started it up and run it at compression ratios
9 of twenty-five to one instead of nine to one like it was
10 designed for?

11 That parts started breaking down like
12 crankshafts and brakes because they were overstressed,
13 connecting rods and bearings and all those things fail in
14 an early point in their life, then when you go talk to
15 General Motors, you can be specific about the parts of
16 the engine.

17 Q You were getting nothing of this specific
18 type of information?

19 A Nothing was provided me in writing detailing
20 what the problems were. We had all kinds of bull
21 sessions sitting in people's offices about things that
22 TVA was doing wrong, any one of which if a person went
23 out and did the proper staff work to develop the premise
24 and detail what was wrong would have been probably be a
25 valid safety issue.

1 But just saying, you know, one line, this is
2 wrong, this is wrong, this is wrong, that just wasn't the
3 way we did business.

4 Should I or Mr. Culver as a manager have
5 gone out and staffed it ourselves? I don't really
6 believe that was our responsibility in life, either. It
7 was our assigned mission in NSRS to develop issues to the
8 point where we could clearly define what the issues were,
9 defend them technically, make a recommendation to the
10 line organization, that was something to be done to
11 improve or correct.

12 Q Did you feel a responsibility if one of your
13 staff came up with a general statement, we'll use the
14 example that the 1982 diesels aren't worth anything, did
15 you feel the responsibility to send them out and tell
16 them to document that?

17 A Why, I most certainly did.

18 Q Did you want them to go do that?

19 A Of course. That would have been the measure
20 of success for my group.

21 Q With respect to the, I'm going to talk about
22 just with respect to the Black & Veatch review, okay? I
23 mean, I take it that those kinds of comments were coming
24 in from your group, the unsubstantiated comments were
25 coming in from your group with respect to Black & Veatch,

1 too?

2 A Of course.

3 Q Did you feel time constraints to keep them
4 from going out and documenting these?

5 A No. In fact, I, even though Newt had signed
6 the report, my report came out like four months later.

7 Q Yes.

8 A We had plenty of time to substantiate
9 anything we wanted to substantiate, and if we had found
10 anything that was improper or incorrect, then in the
11 general conclusions of the policy committee and task force
12 reports, I felt no constraints that we couldn't reopen
13 issues.

14 Q I guess my question is, was your approach to
15 the individual that brought these concerns to you was,
16 "Well, where's your proof to show that," or was your
17 approach, "Well, if you think that's the situation, go on
18 down there and find it and document it for me"?

19 Was it more of a, "Well, I hear you talking
20 about a problem here, where is your substantiation?"

21 And if they didn't have it, you know, that
22 would kind of end it, as opposed to, "Well, if you think
23 that's a serious problem, get on out there and document
24 it"?

25 A We probably had staff meetings, group

1 meetings an average of once every couple of weeks, once a
2 month, in that order, and each of those meetings, at
3 least once in that meeting, I pointed out that we weren't
4 doing a too great of job of identifying issues and
5 documenting them, and that that was our job.

6 Q Okay.

7 A I don't believe anyone was ever constrained
8 or restricted in any way from going out and identifying
9 issues and documenting them. In fact, one of the
10 principal criticisms of our group was we spend all our
11 time sitting here in the office and didn't get out and
12 look at anything.

13 Q I believe that they weren't constrained from
14 doing it, but were they directed to go out and do it?

15 A Oh, yes. In fact, at one point in the
16 running of the group, I almost made as a management
17 appraisal system goal that they spend an X amount of time
18 in the plants, going through the plants and physically
19 inspecting hardware, if you will, against identified
20 requirements.

21 MR. ROBINSON: Go off the record at 3:42.

22 (Short recess.)

23 MR. ROBINSON: Okay. It's now 3:42. We're
24 back on the record. Are there any final comments or
25 questions by anyone regarding the Black & Veatch review?

1 BY MR. KINDT:

2 Q Only one, and that is your feeling, or your
3 opinion of why your staff or members of your staff
4 continued to maintain that these concerns existed while
5 TVA management, including yourself in that, say that they
6 really aren't that kind of a concern? I just wondered
7 why you feel they continued to feel that way, if you've
8 explained all this to them?

9 A We've had an awful lot of discussions about
10 the significance of the Black & Veatch activity. And as
11 I stated earlier, to say that I was happy with everything
12 TVA has done, including everything they did in Black &
13 Veatch activity would be a misstatement.

14 To say that they've done an outstanding
15 engineering design and construction job, I think it's
16 just not true. I would maintain they have done an
17 acceptable job, that the plant can be operated safely, it
18 has been built well enough from the documentation that we
19 have reviewed, it's been built well enough to meet the
20 basic licensing and operating requirements.

21 I personally feel that the whole industry
22 has a reliability problem. When the average plant
23 availability out of some ninety plants through the end of
24 calendar year '84 was like sixty-seven percent, to
25 maintain that that's an acceptable engineering record is

1 ludicrous to me.

2 We have not applied the proper engineering
3 discipline to build and operate the plants they should
4 have been built and operated. Not just TVA, it's the
5 whole industry, with their only nine plants in the United
6 States, that is an accumulative availability factor of
7 eighty percent.

8 And my engineering judgment says that one
9 ought to have at least an availability factor of
10 eighty-five percent over the life of the plant.

11 We made those nice numbers when we
12 commercially decided to build them, and then after we
13 made those economic decisions, we forgot all about why we
14 were building them, basically, which was to produce
15 power.

16 We designed in so many ways to shut them
17 down that we've forgotten how to make them run, and that,
18 to me, is a safety problem.

19 Now, I don't find many licensing people to
20 agree with that, in general, but my basic philosophy is
21 if you never challenge the plant, in other words, if it's
22 well enough designed that the systems operate the way
23 they were designed, it doesn't matter whether the plant
24 has the right safety systems built into it or not because
25 you never need them.

1 To achieve a high enough degree of
2 reliability in the fundamental operating equipment, you
3 don't need the safety systems. In my mind. The issues
4 of the Black & Veatch tended toward reliability
5 determinations. The practices weren't the best
6 practices, I don't know if you'd even call them good
7 practices or not.

8 Our guys said that's a safety problem
9 because we didn't have the best practices in the country.
10 They may well be right. My perspective was that that is
11 a reliability problem, and reliability problems tend to
12 be random failures, and random failures are accounted for
13 with redundancy and diversity type considerations in the
14 design.

15 So, drawing specific modes of failure and
16 identifying them is very difficult in reliability
17 problems. You only know about it after the fact, not
18 before the fact.

19 Our guys see this cloud of uncertainty in
20 determining just what the margin in the plants is. Since
21 they can't define the margin, they conclude that it's
22 unsafe, or tends toward unsafe, and I don't agree with
23 that conclusion.

24 Q Is there some basis for their conclusion?

25 A They never, other than bull sessions,

1 identified any real basis to me to put together a logic
2 form that somebody could take action on it. There are
3 notable exceptions in the group.

4 Phil Washer was one of them. Phil did his
5 job very well. I had absolutely no complaints with Phil,
6 the quality of Phil's work.

7 BY MR. STONE:

8 Q A couple of quick ones on this NSRS report.
9 You're telling me the bottom line of this report is the
10 same as the one in the committee report, yet you've made
11 about seven additional recommendations in this, there's
12 some additional things that you folks need to do out
13 there. If you were in agreement, why the additional
14 recommendations, what was --

15 A It has to do with my reliability outlook.
16 One of the recommendations, for example, was you have not
17 properly set the instantaneous trip breakers.

18 Q Okay.

19 A Well, to call on the trip breaker in the
20 first place, you already got a fault in the system that
21 says you got an extraordinarily high load in the circuit
22 somewhere.

23 The difference between a setting for
24 starting load type considerations of 700 percent versus
25 1300 percent of the normal running load probably isn't

1 significant from a safety point of view.

2 But if you look at what stressing of that
3 component has done as a result of allowing starting
4 conditions to exceed the 700 percent, over some undefined
5 period of time, you are degrading insulation, you're
6 stressing relays, putting a little bit extra power
7 through a contact, whatever. Those things ultimately
8 lead to premature failure of the component.

9 When is it going to happen? Nobody can
10 define. But the failure rate of electrical devices in
11 the nuclear utility industry is pretty high. The per
12 demand failure rates are very high, and very predictable.

13 Why are those failure rates so high? It
14 could be that the component is just not designed very
15 well to start out with, but I personally feel that one of
16 the contributing factors may be if everyone is setting
17 the instantaneous trip breakers, some factor above what
18 standard, National Electric Code practice would be, could
19 be contributing to that premature failure.

20 Motor operator valves have a horrendously
21 sorry record in this country, and is it a safety problem.
22 In the long run, it's a safety problem, because sometimes
23 you're going to demand the valve close or open,
24 whichever, and it's not going to to move because the
25 motor is going to fail.

1 Can I tell you which one, no. Can I do a
2 safety analysis of it, no, because I don't know the
3 specific one. How do I over come that, I design two of
4 them in the system where it counts, and the odds of the
5 probablistically of both of them failing on demand at the
6 same time is extremely low.

7 Therefore, it's not a safety problem. It is
8 a present reliability problem. We have forced outage
9 rates in this country that are averaging ten percent of
10 total reactor operating time. There really ought to be
11 like less than one percent. And those are failures of
12 pieces of equipment that cause the reactor to shut down
13 not under our control.

14 I think the findings of Black & Veatch
15 tended in that direction. Is it good practice to heap
16 cables on top of a cable tray and spray glue all over
17 them, Flamastic, as they called it?

18 I don't think that's good practice if you
19 design a cable tray, they're laying on the floor during
20 construction for people to walk and that sort of thing.
21 Can I say somebody walking across a given cable is going
22 to cause a failure, no, I can't say that.

23 I can say it probably isn't a good idea to
24 walk all over the electrical cables. We saw cables all
25 over the floor. Were they safety-related cables? I

1 don't know. We didn't identify whether they were or
2 weren't.

3 But there were lots of practices that have
4 since by challenged in much more detail than we did in
5 the Black & Veatch study, and they are still being
6 evaluated.

7 Are they immediate safety problems? I
8 concluded they weren't? I can probably walk across a
9 given cable and step on it every time a thousand times
10 and not hurt it, but I if I happen to have a nail
11 sticking through my boot when I walk on it, I might
12 penetrate the insulation that might end up grounding out
13 somewhere the life of the plant.

14 Those are the kinds of issues that were
15 involved in my mind. My group, I guess in general would
16 conclude that it was the compendium of them which made it
17 an unsafe condition.

18 I would conclude that from hearing the
19 output from them, since they were my group. I don't
20 think they can support it in its entirety even now. A
21 lot of conditions I wouldn't have done the way they were
22 done, but I can't say that it was unsafe the way they did
23 it.

24 BY MR. ROBINSON:

25 Q I just have one final question on your

1 presentation to ACRS, probably a very simple answer.
2 You've got a page here that indicates NSRS draft report
3 conclusions?

4 A Right.

5 Q And then a page that indicates NSRS final
6 report conclusions?

7 A Yes.

8 Q Why did you present that difference to the
9 ACRS?

10 A Well, they were wanting to know the
11 differences between the draft report and the final report
12 and the significance of it.

13 So, I presented -- the simplest way for me
14 to present what the differences were to, and to explain
15 them was to say "Here are all the conclusions we had in
16 the draft report and here are all the conclusions we had
17 in the final report."

18 The draft report had comments from everybody
19 in the group, which were editorial in nature, as you
20 recall.

21 Q How did the ACRS know there was a difference
22 between the draft report and the final report?

23 A I don't profess to know how they got their
24 information. I presumed that somehow Hugh Thompson had
25 gotten them a copy of my draft report. Hugh Thompson and

1 Elinor Adensam visited our offices sometime in May, I
2 believe of '85, could have been late April.

3 And one of the subjects was the Black &
4 Veatch activity. I provided Hugh and Elinor a copy of
5 the draft report at the time along with a copy of the
6 final report, and we discussed the differences.

7 Q Were they satisfied with your explanation of
8 the differences?

9 A I don't know that they really concluded one
10 way or the other. I don't recall any discussion of what
11 was acceptable or unacceptable.

12 Q They just took your explanation?

13 A Yes. As far as I can tell to this day there
14 had been no NRC position one way or the other as to
15 whether the issues identified in the Black & Veatch were
16 substantive or not substantive, whether the conclusions
17 reached by TVA were acceptable or unacceptable. I have
18 not seen a copy of the, I believe Tom Kenyon ran a task
19 force in NRC that did a review of the TVA Black & Veatch
20 activity after the employee concern was expressed, and
21 they spent time here in Knoxville and time at the plant.

22 To the best of my knowledge, I haven't seen
23 a report from NRC and SER or anything that says whether
24 we did a good job or a bad job or anything else on the
25 Black & Veatch review.

1 Q You think Kenyon did this in the response to
2 the Hicks letter? When I say the employee concern, you
3 mentioned an employee concern.

4 A Someone had expressed to NRC concern about
5 the quality of the TVA Black & Veatch activity, and it
6 was fortuitous that Elinor and Hugh came here shortly
7 thereafter.

8 And one of the principal things they talked
9 to me about was the Black & Veatch activity. I can only
10 presume it was due to that employee concern.

11 To that point in time, NRC to the best of my
12 knowledge had not done a detailed review of the Black &
13 Veatch activity. They had all the documentation, as far
14 as I, as I know, but they had not done a review of it, in
15 depth review of it.

16 Obviously, if somebody is criticizing the
17 activity, if I were NRC, I'd do it. And they formed the
18 task force of six or seven people to do such a review.
19 It involved both Region II and headquarters people at
20 that point. I remember calling Steve Weise, one of the
21 people involved in that tasks force, he's Region II.

22 Q Jerry Blake, you know Jerry Blake?

23 A That name rings a bell, I don't put a face
24 to it.

25 Q That's neither here nor there. Are there

1 any final comments that you want to make regarding Black
2 & Veatch before I move on to another subject?

3 A I think the presentation I made at the NRC
4 and to the ACRS pretty well states my position relative
5 to the Black & Veatch review activity.

6 I concluded that the plant was basically
7 okay. It wasn't the best plant in the world, a lot of
8 things I probably would have done differently, but that's
9 true of anything I look at.

10 I couldn't find and my people didn't
11 identify anything that I concluded was going to cause the
12 plant to be unsafe.

13 Q Okay. The next issue, as I indicated in the
14 break to you is Phil Washer brought up a concern about an
15 NCR regarding missing, destroyed pipe support
16 calculations that was originally, NCR originally
17 classified as nonsignificant.

18 And in talking with Phil, he, he pushed this
19 item, and got into a number of discussions with the pipe
20 support people, and there's an indication that Newt
21 Culver indicated that because of Washer's tactics in the
22 meetings with these pipe support people, that he was
23 losing his objectivity as an NSRS reviewer.

24 Can you shed any light on this situation for
25 me?

1 A Well, let's back up a little bit and give
2 the history of the missing pipe support calculations from
3 my recollection of it.

4 Q Okay.

5 A It came to NSRS as an expression to Phil by
6 a concerned employee in the Office of Engineering. The
7 concern was that in the early stages of that
8 nonconformance report, it had been classified by the
9 lower level engineers in the Office of Engineering as
10 significant.

11 At approximately the M-5 level in the Office
12 of Engineering, it got changed to nonsignificant and it
13 was being closed out as being nonsignificant, which meant
14 that it did not get reviewed for the report by the
15 Nuclear Engineering Branch. That's Office of Engineering
16 procedure.

17 Q Okay.

18 A They were on the verge of closing it out
19 when the employee came to Phil, gave him the details.
20 Phil then did the staff work on it. Did a fine job of
21 identifying what the issues were, reported those issues
22 in a written form through myself and Newt Culver to the
23 Office of Engineering for correction.

24 There are basically two recommendations, one
25 was report it to NRC, because you have violated your

1 commitment of quality records to maintain these
2 calculations.

3 It came out of your Chapter 15 QA
4 requirement that said we meet ANSI N.45.2, which
5 specifically identified supporting calculations for pipe
6 supports as being a quality record for the life of the
7 plant.

8 We didn't have all the records. So, we
9 obviously are deficient against an PSAR commitment, and
10 in our definition, that's a reportable item and is
11 significant.

12 He said you have for corrective action, you
13 can do one of two things, you can regenerate the
14 calculations so you have them, and therefore, you meet
15 your requirement, or you can justify it to NRC why you
16 don't think you need to have them.

17 The line organization basically disagreed
18 with us on all counts, and it was a substantial amount of
19 interaction between ourselves and the line organization,
20 some of it Phil one-on-one, some of it in group meetings,
21 some of it Mr. Culver one-on-one with various people over
22 there.

23 The bottom line was that we weren't
24 really making much progress until Phil's report became
25 publicly visible, via the newspapers, and NRC was

1 provided a copy of the report.

2 It all precipitated with the publication in
3 the Wall Street Journal and Washington Post, as I recall,
4 of our thimble tube report from Sequoyah, all of our
5 reports all of a sudden became public domain and
6 everybody was reading them.

7 At that point, Region II sent an
8 investigator up here, or an inspector to conduct a review
9 of the conditions surrounding Phil's report.

10 And in his closing exit interview, said to
11 TVA, "You must regenerate the calculations." To which
12 TVA replied, "Let us try to justify not regenerating the
13 calculations."

14 Q " TVA replied that to NRC?

15 A In the exit.

16 Q Okay.

17 A And in the meantime before the, just prior
18 to the approval of the inspector, a second NCR was
19 generated which was classified as significant and was
20 classified as reportable by NEB.

21 Okay. In those meetings that preceded the
22 public disclosure of the report, there was a lot of
23 disagreement. I personally agreed with Phil one hundred
24 percent.

25 It was such a simple straightforward answer,

1 that I couldn't understand why it wasn't obvious to the
 2 most casual observer that the things should have been
 3 reported to NRC, and you go straight out and either
 4 regenerate the calculations or tell NRC why you don't
 5 think you need them.

6 This seemed to bother the people in
 7 Engineering for some reason. I don't to this day
 8 understand why it wasn't just as simple to do it the
 9 right way, or what we concluded was the right way; and the
 10 way it ultimately was agreed to.

11 Q Was Newt in full agreement with you and
 12 Phil?

13 A Newt signed the letter and Newt was in
 14 agreement, to the best of my knowledge, Newt was in
 15 agreement with the conclusions we had reached.

16 Q Now, Newt took a slightly different tack in
 17 working the problem. His first concern of his was and
 18 probably should have been, are the supports technically
 19 adequate.

20 We spent an awful lot of time addressing
 21 that issue of are the supports technically adequate.
 22 We're talking something in the order of four thousand
 23 Class I supports, and the only record of calculations we
 24 had was some design review calculations performed by EDS
 25 which were intended to verify the quality assurance

1 process of EDS.

2 I forget how many of those calculation there
3 were, there were a fair number of them, but certainly
4 nowhere near the thousand mark. There was probably three
5 or four hundred of them.

6 Phil reviewed those calculations and he had
7 some difficulties with some of the design review
8 calculations, in that they had not addressed all of the
9 acceptance criteria of the TVA procedure.

10 But EDS was doing the design to a TVA
11 procedure, so they had to meet the requirements of the
12 TVA procedure.

13 I don't recall all the technical
14 difficulties he had, but there were a few discrepancies
15 that he was having difficulty finding his way through and
16 being able to conclude that everything was okay.

17 There was not a very good response at that
18 point in the earlier phases of that exchange between
19 ourselves and the line organization.

20 Newt tried on two or three occasions, and I
21 don't recall the specific meetings and the details of
22 meetings, but but he had a couple of meetings with the
23 Engineering people and Phil and myself had a couple of
24 meetings with the Engineering people and so forth.

25 The bottom line of our meetings was that

1 they were going to develop a justification for why they
 2 didn't need to regenerate the four thousand or whatever
 3 sets of calculations, which was in my mind one of the
 4 recommendations we had made which was to justify why you
 5 don't need them and take an exception to the PSAR QA
 6 commitment to have them as a quality record.

7 They had done a substantial sampling
 8 procedure to qualify all of the supports based on some
 9 sample. I don't recall all the details of the sample,
 10 but they had done a statistical sampling of a random set
 11 of the calculations and reviewed them in some detail to
 12 determine whether there were any difficulties with the
 13 support designs.

14 As I recall, one of those samples they did,
 15 Phil had some problem with the way they did that, too,
 16 and, so, events passed us by, in effect, when his report
 17 was made public and NRC came up here and said thou shalt
 18 regenerate them.

19 TVA developed their justification for
 20 corrective action for that second NCR. They went to
 21 Atlanta and had a meeting with Region II, and the bottom
 22 line was from NRC Region II by the ends of the first
 23 refueling of the Watts Bar Unit I, they shall regenerate
 24 all the calculations.

25 And that is to the best of my knowledge in

1 their documentation system that they have to regenerate
2 all the calculations.

3 Now, some of those meetings were very
4 heated, tempers flared quite frequently. Phil knew all
5 the principals and all the principals knew him.

6 I think basically both sides were
7 technically competent and knew what the other was talking
8 about. There was some recalcitrance on the part of the
9 line organization to do what Phil felt was the right
10 thing to do.

11 Phil has a very direct way of stating
12 issues. And he was right in this particular case. The
13 tone with which he presented it upset some people in the
14 engineering organization.

15 There were conversations between some people
16 engineering that I wasn't party to to Mr. Culver that
17 said, in effect, that Phil had come into the meetings
18 with his mind closed, and that there really wasn't any
19 give and take in the meetings, and in reality, he had
20 already made his mind up,
21 and it wasn't a very good way of doing business.

22 Q Even though you weren't privy to the
23 conversations, do you know who the calls were from in the
24 engineering group?

25 A I think I recall, but I can't state with

1 certainty who the people were. It came from the Civil
2 Engineering Branch. As I recall, it was Bob Burnett, but
3 I can't say that with any certainty. I believe that's
4 who it was, is the, he's the Chief of the Civil
5 Engineering Branch.

6 Q All right. Go ahead.

7 A Newt told me about the conversations, and in
8 a management appraisal system approach to things, I had
9 an obligation to discuss any feedback I got from anyone
10 with Phil as to his style and how he got along with
11 people and so forth. I had such a discussion with Phil.

12 Personally, I didn't have any problem with
13 Phil's style. I believe in telling it the way it is.

14 If people get their feelings hurt, it's
15 their problem and not ours, but not everyone sees things
16 that way.

17 Q Did Newt order you to have a conversation
18 about it?

19 A Yes.

20 Q Was it your idea?

21 A It was my idea. Clearly, if there's someone
22 in the line organization that's having difficulty with
23 something NSRS is doing, Phil had a right to know what
24 that feedback was, because sometimes minor changes in the
25 way you do business can make miraculous changes in the

1 success you achieve in doing it.

2 I don't really that there was anyone saying
3 that Phil was wrong, they may have meant that, but that
4 wasn't the way it came to me. It was a style issue, not
5 a significance issue.

6 Q Yes.

11

7 A I could see where one might conclude that
8 it, since the stories were black and white, there really
9 wasn't a gray involved, that someone might have been
10 criticizing him for taking an unreasonable position.
11 That wasn't the way it was fed back to me. It had to do
12 with style. I believe I had that conversation at least
13 twice with Phil, not with regard to the missing support
14 calculations.

15 There was another occurrence with someone,
16 feedback that we had come into a meeting with our mind
17 made up and therefore the meeting served no purpose, and
18 they probably were right.

19 Our minds, in the second instance, I know
20 were made up, mine included, and it involved the tornado
21 missile protection design of the Bellefonte station. And
22 Phil was involved in that one, as well, because of his
23 civil structural background.

24 My reaction is, when you're right, you're
25 right. If you think you're right, you ought to go fight

1 for what you any is right.

2 Q Were there any adverse performance
3 evaluations or personnel happenings against () as a
4 result of this?

5 A I did two performance evaluations of ()
6 since I've been here, both of them were superior rating.
7 In fact, on one instance, I would have given () an, the
8 next higher, I think it's excellent or outstanding,
9 whatever the outstanding one is, the highest level.

10 I wasn't able to justify the higher level to
11 Culver, but I would have given () on- because I thought
12 that much of () work. I made a recommendation that
13 () be given a promotion to an M-6. That was not
14 favorably acted upon.

15 The reasoning was that we didn't have an M-6
16 vacancy, and you can't promote a vacancy that doesn't
17 exist. They didn't feel to my recollection that he could
18 convince the personnel people and so forth that another
19 M-6 in my group was justified.

20 We had two M-6 positions in the group at
21 that time. Earlier we had had three, but when Dallas
22 Hicks left, he took with him the M-6 position that had
23 been justified for him.

24 The full logic of what went through Newt's
25 mind arriving at the conclusion not to pursue an M-6 for

6,7c portions

1 is we never really communicated about it. He just
 2 said he wasn't going to approve it, and we didn't have
 3 the position. There were only two M-6's in the Reviews
 4 Group in the Investigation and Reviews Group, and there
 5 were only going to be two in our group.

6 MR. ROBINSON: Take a break.

7 (Short recess.)

8 BY MR. ROBINSON:

9 Q Back when you first started talking about
 10 your performance appraisals of () correct me if I'm
 11 wrong, it sounded like you, you would have thought about
 12 giving him an excellent, but you said you couldn't
 13 justify that to Newt.

14 Was there, was there an interplay? Was
 15 Newt, what was the conversation, if any, between you and
 16 Newt about why () couldn't be rated excellent?

17 A I don't think Newt felt that anyone in the
 18 group could be rated excellent.

19 Q Oh.

20 A The feedback or the general feeling I got
 21 was that no one in NSRS was deserving of the excellent
 22 rating, and therefore, nobody was going to get an
 23 excellent rating.

24 Q To your knowledge, no one got one?

25 A Not to my knowledge, because certainly no

6,7C notes

1 one in my group, and I don't know of anyone in the
2 Investigations and Reviews Group did or not, but I really
3 don't think they did.

4 Q Just --

5 A It was tough enough to justify the superior.

6 Q Superior rating.

7 A So, there may have been one in the
8 Investigations and Reviews Group, I don't know. I've
9 never gone to the files to find out.

10 Q And you just, do you just attribute this to
11 the uniqueness of Newt's rating system, like if you get
12 another manager in here, he may rate everybody excellent,
13 that type of thing?

14 A I believe that could be.

15 Q Just a hard rater?

16 A Yeah, I guess my, quite honestly, my feeling
17 about management appraisal systems universally is that
18 they are not very good. And TVA has a tough one compared
19 to most, to say that a person in any given year who's
20 done everything he's supposed to do and maybe a little
21 bit extra is not even deserving of a cost of living raise
22 is not very good personnel management policy.

23 And there were people in the Nuclear Safety
24 Review Staff who had received proficient ratings for more
25 than one year, hadn't had a raise for a couple of years,

1 not even a cost of living raise, because all the raises
2 granted in those years were merit promotion type raises
3 and had to be allocated on the the basis of the rules of
4 the merit pay system.

5 So, I just didn't happened to agree with the
6 system, but I was, I had to fit the system, because
7 that's what we're in.

8 Q Did --

9 A I don't think they had anything to do with
10 the individuals, as such. It had to do with Newt's
11 philosophy on what was proficient, what was superior and
12 what was excellent. To my knowledge, no one got less
13 than proficient rating, no one got above superior.

14 Q Did Newt ever specifically mention
15 styled in the pipe support calculation arguments as being
16 one of the factors that kept rating down?

17 A No, not to me, I don't recall such a
18 discussion. I think I would have remembered it if he had
19 ever mentioned anything.

20 We have discussed it since, and he had
21 mentioned that that was part of his thought, and to get a
22 promotion, one has to fit. It doesn't have anything to
23 do with being right or wrong, you got to be right in the
24 right way.

25 And if your going to go up the management

1 system, you got to be able to accommodate other people's
2 style with your style to get accomplished what you're
3 trying to get accomplished.

4 And he felt that there was some deficiency
5 in () style. As I say, it's no deficiency to me, I
6 don't put my store in people yelling and stomping.

7 If they want to yell and stomp, fine, as
8 long as I can understand what they're saying while their
9 yelling, I'll listen to the words and not to the style,
10 but it does annoy some people.

11 Q Jim, do either you or Jack have any other
12 questions in your mind right now?

13 Do you have any other comments? That's all
14 the areas I need to cover right now with you, Jim. I
15 don't have, I'm not saying I won't talk to you again as
16 time goes along, but are there any final comments that
17 you want to make?

18 A Well, regarding () performance and
19 () deserving of promotion, I made the recommendation
20 initially, I still have that recommendation in my file, I
21 would have no hesitation at this point if () worked for
22 me or was still working for me making that same
23 recommendation again.

24 I still think that () his experience,
25 his level of knowledge, his technical competency in

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1 general all are deserving of promotion.

2 I can understand the organizational
3 restriction of not having a position to promote him so.
4 That's one of the vagaries of our business, if you will.

5 Even with superior ratings, the financial
6 advancement within the M-5 grade, which is his permanent
7 grade, are restricted. He has to get an excellent rating
8 to advance much on a permanent basis much above where his
9 pay scale is now, and I don't think that's personally a
10 good way of doing business.

11 A person who does as good as work as
12 had done should have available to him some
13 personnel way of doing business to grant him financial
14 recognition for that superior job.

15 Q Is Kermit Whitt a hard rater?

16 A No, I don't think Kermit -- Kermit is not
17 near as hard of a rater in my mind as Newt was, but, you
18 know, he's subject to the same constraint and personnel
19 actions as Newt was.

20 Q From a promotion standpoint, but not
21 necessarily from a rating, as excellent as opposed to
22 superior?

23 A Probably not. I don't -- () didn't work
24 for me substantially enough into the next rating year to
25 have the, I had an input into the next year's rating, but

1 there wasn't really that much time to rate.

2 So, I still think he's an outstanding
3 performer, and would defend his technical conclusions to
4 my last breath. I've never known him to be wrong in his
5 bottom line conclusions.

6 He does a very, very thorough job of
7 researching and documenting what he's researched. In my
8 mind, he's as good as we have in the NSRS, and --

9 Q Didn't he have some concerns about the Black
10 & Veatch?

11 A His concerns were reported as findings, to
12 the best of my knowledge, there was, none of
13 concerns were omitted.

14 Q I guess the concerns I was talking about
15 were the concerns that Culver went ahead and signed off
16 on the policy committee report with the situation as it
17 was.

18 A Well --

19 Q Did he?

20 A I recall the whitewash statement you alluded
21 to as being associated with our response to the initial
22 line organization response to our report.

23 They responded at the end of July. We wrote
24 a second report that responded to their response, and I
25 happened at that time to have been on an extended

1 vacation, and Phil was acting in my absence, and as I
2 recall, it was the signing out of that second report that
3 got involved in the statements of whitewash.

4 MR. ROBINSON: I see. I see. Is there
5 anything else in any other category that you want to make
6 a comment on, any other questions? Okay. Well, thank
7 you. That will conclude the interview. Like I said, if
8 we need to talk to you again, we'll feel free to call
9 you. Thank you.

10 END OF STATEMENT

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CERTIFICATE OF OFFICIAL REPORTER

This is to certify that the attached proceedings before the UNITED STATES NUCLEAR REGULATORY COMMISSION in the matter of:

NAME OF PROCEEDING:

AN INVESTIGATIVE INTERVIEW OF: James Murdock

DOCKET NO.:

PLACE: Tennessee Valley Authority
East Tower, 3rd Floor
Knoxville, Tennessee

DATE: 4/8/86

were held as herein appears, and that this is the original transcript thereof for the file of the United States Nuclear Regulatory Commission.

(sigt) Christine B. Smith
(TYPED) Christine B. Smith.

Official Reporter

Reporter's Affiliation

RESULTS OF INTERVIEW WITH E. GRAY BEASLEY ON
MAY 14-15, 1986 AS PREPARED BY INVESTIGATOR
LARRY L. ROBINSON

On May 14-15, 1986, E. Gray BEASLEY, Manager of Engineering Assurance, Tennessee Valley Authority (TVA), was interviewed in his Knoxville, TN office by NRC Investigators Larry L. Robinson and Jack Kindt. The nature of the interview pertained to the Independent Design Review (IDR) of the Auxiliary Feedwater System at the Watts Bar Nuclear Plant (WBN) by Black and Veatch Architectural Engineering Firm, and the parallel and subsequent activity by the TVA Policy Committee and the TVA Task Force as a result of the Black and Veatch design review.

BEASLEY stated that about February 1982, TVA had a meeting with NRC, Region II, and James P. O'REILLY, then the Regional Administrator of Region II, suggested that TVA have an IDR done of their auxiliary feedwater system.

BEASLEY stated that on October 7, 1982, George KIMMONS designated a TVA Policy Committee, and that KIMMONS designated BEASLEY as the Chairman of this committee. He stated that Max SPROUSE of TVA's Design Branch, was to head up the IDR program and that Henry JONES was designated as Program Manager.

BEASLEY stated that TVA selected the Black and Veatch Company to do this design review and that in parallel with Black and Veatch's efforts, JONES was to supervise the activity of TVA Task Force to make sure that Black and Veatch had all the assistance they needed, and had access to all the areas and documents they needed to complete the review. BEASLEY stated that there were numerous contacts between the Nuclear Safety Review Staff (NSRS) and JONES during the conduct of the Black and Veatch review. He stated that JONES was currently working at the Sequoyah Nuclear Plant. BEASLEY stated that he recalled that Ed COLE and Bob OLSEN were also on this TVA Task Force, working under JONES.

BEASLEY stated that NRR laid down some fairly stringent guidelines for the conduct of this IDR. He advised that by February 1983, Black and Veatch had identified 428 individual findings in their review. BEASLEY stated that the TVA Policy Committee wanted Black and Veatch to arrange the findings into groups of related findings, but that Black and Veatch was reluctant to do this.

BEASLEY stated that NSRS was heavily involved with the TVA Task Force during the conduct of the design review. He stated that both the Task Force and NSRS were ensuring that TVA was properly resolving the findings that Black and Veatch identified as the project moved toward completion.

BEASLEY stated that he did not recall Newt CULVER, Director of NSRS at the time, having any problems with a final report that was published by the TVA Policy Committee in March 1984 regarding the design review. BEASLEY stated that he did have a concern as to whether Joe ANDERSON, Director of the Office of Quality Assurance (OQA), would sign off on this report. He stated that John McDONALD, who worked under ANDERSON, was very careful

about the wording in any TVA report that was going to be distributed to NRC or outside TVA. He stated that McDONALD wanted the wording in such reports to be exactly right.

BEASLEY advised that the conclusions, as they appear in the final Policy Committee report of March 1984, were the result of a mutual effort between NSRS and OQA. He stated that the conclusions were their words. He advised that CULVER, Jim MURDOCK of NSRS, and McDONALD, were all involved in preparing these conclusions, which appear on page 2 and page 13 of this Policy Committee report.

BEASLEY stated that he knew that CULVER was also very careful about putting things down on paper without having good supporting documentation. He stated that he knew this from working directly with CULVER in NSRS until August 1980. BEASLEY stated that these final conclusions, as prepared by NSRS and OQA, were worded without his direct involvement, and that he was a bit angry that these conclusions had been presented to KIMMONS without his (BEASLEY's) approval. BEASLEY stated however, that KIMMONS readily approved the conclusions, so he (BEASLEY) "swallowed" his irritation.

BEASLEY stated that the letter of transmittal on the TVA Policy Committee report pertaining to the IDR, was addressed to Mr. RAULSTON, because RAULSTON was the contact with TVA's Office of Power on licensing matters. BEASLEY stated that the report would probably had gone to RAULSTON, and then to Larry MILLS, and then to NRR. BEASLEY stated that the report was intended to go to NRR but that the cover letter was appropriately addressed to RAULSTON to go through the proper TVA chain to get to NRR.

BEASLEY advised that the final TVA Policy Committee report on the Black and Veatch review was probably circulated for signatures to all the Policy Committee members by his secretary. BEASLEY stated that he, himself, could possibly have hand carried it to the signatories, but that he did not recall doing this. BEASLEY reiterated that he did not recall any problems getting CULVER's signature on the report, but that he remembered that he had to follow up a bit on the OQA signature because of the cautiousness exercised by McDONALD.

BEASLEY stated that he recalled a meeting between TVA and NRR in late 1983 at which NRR told TVA to report the corrective actions that they were taking on the Black and Veatch findings directly to Black and Veatch. He stated that he remembers that a Mr. NOVAK and a Mr. KENYON of NRR were present at that meeting. BEASLEY advised that he believed that at that time these IDRs were going out of style with NRC, and NRC was starting to do its own reviews. He stated that he thought that NRR was trying to tie up the loose ends of any outstanding design reviews in the late 1983 time frame.

BEASLEY stated that he recalled that he had some direct contact and conversations with MURDOCK regarding MURDOCK looking into some corrective action on the Black and Veatch findings, but that he (BEASLEY) did not recall any objection by MURDOCK to CULVER signing off on the TVA Policy Committee report pertaining to the Black and Veatch review.

BEASLEY stated that he personally had no concerns about the way Black and Veatch handled their review. He stated that they were very open and above board with TVA.

BEASLEY stated that the Policy Committee meetings were primarily composed of presentations by the TVA Task Force pertaining to the status of the IDR. BEASLEY provided a copy of his file of the Policy Committee meetings minutes to NRC Investigators.

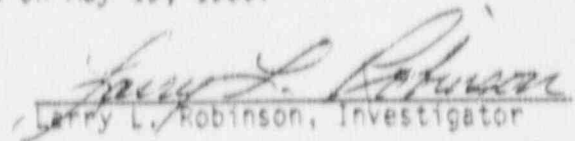
BEASLEY stated that if were left up to the staff members of NSRS below CULVER, NSRS reports would probably never get out of NSRS because there was so much disagreement and discord among the staff members. BEASLEY stated that he knew that CULVER would never sacrifice any safety principles or put himself in any type of jeopardy regarding a statement pertaining to safety just for the interest of quick scheduling and fuel loading at WBN. BEASLEY also stated that he, himself, would never do such a thing.

On May 15, 1986, BEASLEY was recontacted by Investigators Robinson and Kindt after he had compared the TVA Policy Committee report to NSRS Report No. R-84-19-WBN, entitled "Nuclear Safety Review Staff Assessment of the Results of the Black and Veatch Independent Design Review of the Watts Bar Nuclear Plant Auxiliary Feedwater System." BEASLEY stated that as a result of his review, he felt then and still feels very comfortable with the entire Policy Committee Report, even after doing a specific comparison to the final NSRS report, which was published in July 1984, four months after the Policy Committee report was published.

BEASLEY stated that even though he did feel comfortable with the Policy Committee report, the July 1984 NSRS report showed concerns in the following areas: (1) It was noted that there were many discrepancies in what was designated as Category 3 of the Black and Veatch findings. This discrepancy involved the fact that the out-of-function items, which were showed in very light lines on the conceptual drawings of the various systems did not agree with the detailed drawings of those out-of-function items. BEASLEY stated that, in other words, the conceptual drawings of a given system would show the functioning parts of that system in heavy lines. He stated that in order to put this system into context, the out-of-function systems would be shown with light lines on these conceptual drawings. He stated however, that there would be detailed drawings of these out-of-function systems shown on the conceptual drawings. The finding was that the detailed drawings of these out-of-function systems did not agree with the light lined drawings on the conceptual drawings. (2) Discrepancies in the method of calculating base plate stress calculations. BEASLEY stated that it was NSRS position that if additional loads were to be applied to the base plates, even if the calculations showed that this additional load was insignificant, you should record these insignificant calculations and continue to make additions to the stress on these base plates in case the sum of insignificant calculations became significant. (3) Category 20. Time Delay Settings on Breakers. BEASLEY stated that TVA did not have a procedure in which the time delay settings that had been empirically determined on these breakers were to be recorded back on the drawings. He stated that TVA did eventually establish procedures on these settings but NSRS said that since there was a discrepancy in this area, TVA should look at other items such as motor

driven valve settings. (4) Category 35. Did not comply with the National Electric Code. BEASLEY stated that the very front page of the National Electric Code (NEC) states "Does not apply to utilities." BEASLEY stated that obviously following the electric code is good practice but there was no requirement to follow the NEC. He stated that the real reason for the circuit breakers was to protect the various motors used in driving the components of the system, not to protect the wiring of the system. BEASLEY reiterated that, "bottom line" he still felt very comfortable with the Policy Committee report, even after his comparison of this report to the July 1984 NSRS report.

This Results of Interview was prepared on May 19, 1986.


Larry L. Robinson, Investigator