

United States
Nuclear Regulatory Commission



Report of Investigation

CRYSTAL RIVER NUCLEAR PLANT:

POSSIBLE DELIBERATE VIOLATION OF PLANT
DESIGN BASIS

Office of Investigations

Reported by OI: **RII**

RII

Title: CRYSTAL RIVER NUCLEAR PLANT:

POSSIBLE DELIBERATE VIOLATION OF PLANT DESIGN BASIS

Licensee:

Case No.: 2-94-036

Florida Power Corporation
P.O. Box 219 NA-21
Crystal River, Florida 32629

Report Date: May 24, 1995

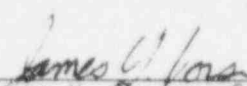
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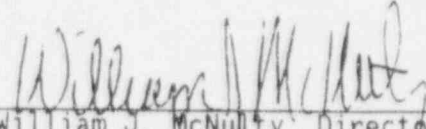
Docket No.: 50-302

Status: CLOSED

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Reviewed and Approved by:


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Office of Investigations
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SYNOPSIS

On November 29, 1994, the U.S. Nuclear Regulatory Commission, Region II, Office of Investigations initiated this investigation to determine if certain reactor operators at Florida Power Corporation's Crystal River Nuclear Plant (CRNP) deliberately violated CRNP procedures by conducting an unauthorized evolution involving the relationship between the water level versus pressure in the makeup tank.

The investigation disclosed that on September 5, 1994, the Operations midnight shift deliberately allowed the makeup tank water level to decrease, within allowable limits, without adjusting the makeup tank overpressure to prevent entering a prohibited area of overpressure. This prohibited area was described by a CRNP procedural document which displayed a plot (curve) of permissible tank level versus pressure response. The purpose for the conduct of this evolution by the operators was to obtain actual tank level versus pressure response data for comparison to the procedural curve. This curve described the permissible operating region.

When the overpressure entered into the unacceptable operating region, annunciators activated, and the operators knowingly continued to obtain data without taking any action to alleviate the overpressure and allowed the unacceptable overpressure condition to exist for 35 minutes. The data gathered by the operators confirmed that the procedural curve differed from the actual curve.

Based upon the evidence developed in this investigation, it is concluded that the shift supervisor, assistant shift supervisor, and two chief operators deliberately violated CRNP procedures by exceeding the allowable makeup tank overpressure, and delaying taking appropriate action to reduce makeup tank overpressure.

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ACCOUNTABILITY

The following portions of this Report of Investigation (Case No. 2-94-036) will not be included in the material placed in the Public Document Room. They consist of pages 3 through 23.

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APPLICABLE REGULATIONS

Allegation: Possible Deliberate Violation of Plant Procedure by Licensee

Technical Specification 5.6.1.1 requires procedures be established, implemented, and maintained covering activities as recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Regulatory Guide 1.33, Appendix A recommends procedures for startup, operation, and shutdown of the makeup system.

Operating Procedure-103B, Plant Operating Curves, Curve 8, Maximum Makeup Overpressure, defines the acceptable makeup tank overpressure versus makeup tank level operating region during operation.

Administrative Instruction-500 (AI-500), Conduct of Operations, paragraph 4.3.1, Procedural Compliance, states it is the duty of every member of the Crystal River Plant work force to comply with procedures.

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CRYSTAL RIVER NUCLEAR PLANT
(September 1994)

ORGANIZATIONAL CHART

Gregory H. HALNON - Manager, Nuclear Plant Operations

Third Shift (midnight) Operations Personnel

Larry A. MOFFATT - Shift Operations Technical Advisor

David A. FIELDS - Nuclear Shift Supervisor

Robert P. WEISS - Assistant Nuclear Shift Supervisor

Jack D. STEWART, Jr. - Chief Nuclear Operator

Mark Van SICKLIN - Chief Nuclear Operator

James T. ATKINSON - Nuclear Operator

Christine SMITH - Nuclear Operator

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LIST OF INTERVIEWEES

EXHIBIT

ATKINSON, James T., Nuclear Operator.....	10
FIELDS, David A., Nuclear Shift Operator.....	8
HALNON, Gregory H., Manager Nuclear Plant Operations.....	11
MOFFATT, Larry A., Shift Operations Technical Advisor.....	15
SMITH, Christine, Nuclear Operator.....	13
STEWART, Jack D. Jr., Chief Nuclear Operator.....	12
Van SICKLIN, Mark, Chief Nuclear Operator.....	14
WEISS, Robert P., Assistant Nuclear Shift Supervisor.....	9

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DETAILS OF INVESTIGATION

Purpose of Investigation

This investigation was initiated to determine whether there was a deliberate violation of U.S. Nuclear Regulatory Commission (NRC) regulatory requirements when plant operators at the Florida Power Corporation's (FPC) Crystal River Nuclear Plant (CRNP) conducted an unauthorized evolution to plot data for an operation curve which was in dispute.

Background

On November 29, 1994, the NRC, Region II (RII), Office of Investigations (OI) initiated this investigation (Exhibit 1) after licensee management reported operators on the midnight shift of September 5, 1994, violated procedures by conducting an unauthorized test. The dispute about the accuracy of the operating curve began on May 10, 1994, during a refueling outage at the CRNP. While performing a surveillance procedure, the operators observed a noticeable decrease in the makeup tank level. A comparison of the actual drop in makeup tank level with the maximum makeup tank overpressure curve in Operating Procedure (OP)-103B indicated a curve plotted with the actual data points trended toward the unacceptable region of Curve 8. This was documented in a problem report. Site Nuclear Plant Technical Support (NPTS), also referred to herein as site Engineering Department, evaluated the problem report and disagreed with the operators concluding that Curve 8 was correct as published. On September 2, 1994, NPTS asked the shift operators if they had anything more to say about the issue before it was closed out. The same shift operators decided they needed more data because they were still concerned about the makeup tank overpressure/level curve (Curve 8). Hence, on September 5, 1994, the midnight shift conducted an "evolution." The crew consisted of the following operators: Shift Supervisor, David A. FIELDS; Assistant Shift Supervisor, Robert P. WEISS; Chief Nuclear Operators Jack D. STEWART and Mark Van SICKLIN; and Nuclear Operators James T. ATKINSON and Christine SMITH. It was agreed by the crew that the evolution would be conducted to gather additional data by measuring the system response as the makeup tank level was lowered. Procedures were reviewed and it was agreed not to violate the operating curve to lower water level below 55 inches. In the event of a loss of coolant accident, ATKINSON was dressed out in anticontamination gear and stationed in the auxiliary building to vent the makeup tank if needed.

INVESTIGATOR'S NOTE: The operators did not place ATKINSON in the auxiliary building because they anticipated a possible loss of coolant accident.

The evolution was conducted by lowering makeup tank water level and plotting data on the system response. Soon after the water level was reduced, the annunciator alarm sounded because pressure was in the unacceptable operating region. At this juncture, the crew continued plotting data without taking corrective action to reduce pressure or terminate the evolution. The overpressure condition existed for 35 minutes.

INVESTIGATOR'S NOTE: The makeup tank is utilized for reactor coolant system letdown, seal return, and chemical addition. Hydrogen pressure is maintained in the tank to scavenge oxygen before it is pumped into the reactor coolant system. (The scavenging of oxygen prevents corrosion of the nuclear fuel in the reactor.)

New data was plotted as a result of this evolution and a problem evaluation report (PER) was submitted by the operators to plant management to have the Engineering Department (NPTS) reevaluate and rescind the old curve. When management reviewed the PER, they realized that the curve was a design basis limit. Any conscious entry into the unacceptable region of the curve would require a safety evaluation. In this case, there was no safety evaluation conducted; thus, CRNP management concluded that the plant had been operated outside of design bases.

Contact with NRC Staff

On March 17, 1995, Thomas A. PEEBLES, Branch Chief, and Paul J. KELLOGG, Section Chief, Operations Branch, RII Division of Reactor Safety (DRS), discussed this matter with the reporting investigator. It was agreed that a violation of plant procedures had taken place when the operators exceeded the limit.

According to the participating reactor engineer, Curtis W. RAPP, DRS, the procedure violated is plant Administrative Instruction (AI)-500 which states reactor operators are to maintain the plant such that administrative limits are not exceeded. In this case, the operators exceeded the allowable makeup tank overpressure then took no action to reduce makeup tank overpressure.

Pertinent Documentation

During the course of this investigation, various documents were collected from the RII staff and licensee. They were:

1. AI-500 "Conduct of Operations" page 134 (Exhibit 2).
2. OP-402 "Makeup and Purification System" (pertinent pages only) (Exhibit 3).
3. OP-103B "Plant Operating Curve 8" (Exhibit 4).

INVESTIGATOR'S NOTE: The curve in question during the course of this investigation is OP-103B, Curve 8. This is one of the 20 curves in OP-103B. There are no other design basis limit curves in 103B. Pressures and levels on the right side of the curve are acceptable. Anything to the left of the curve is unacceptable. The operators were not aware that Curve 8 was a design basis limit at the time the evolution was performed.

4. Logbook entry documenting the evolution (Exhibit 5).

INVESTIGATOR'S NOTE: The logbook entry, at 0447, September 5, 1994, reflects that pressure exceeds limit. At the conclusion, the log reads - total time makeup tank pressure exceeds the limit : 35 minutes.

5. Licensee Event Report (LER) 94-009-00 (Exhibit 6).
6. Data plotted from September 5 evolution (Exhibit 7).

INVESTIGATOR'S NOTE: The LER describes in detail the evolution which took place including the stationing of an operator at the makeup tank vent header in the auxiliary to vent the tank if necessary in the event of a loss of coolant accident. Exhibit 7 is the data plotted during the evolution of September 5, 1995. Note that the data points are on the left side (unacceptable region) of the curve.

Allegation: Possible Deliberate Violation of Plant Procedures

Summary

The following individuals were interviewed by OI:RII on the dates indicated regarding the possibility that they deliberately violated plant procedures. Their transcribed interviews are Exhibits 8 through 15.

<u>NAME</u>	<u>TITLE</u>	<u>DATE OF INTERVIEW</u>
David A. FIELDS	Nuclear Shift Supervisor	12/01/94
Robert P. WEISS	Asst. Nuclear Shift Supervisor	12/01/94
James T. ATKINSON	Nuclear Operator	12/14/94
Gregory H. HALNON	Manager, Nuclear Plant Operations	12/01/94
Jack D. STEWART, Jr.	Chief Nuclear Operator	12/01/94
Christine SMITH	Nuclear Operator	12/14/94
Mark Van SICKLIN	Chief Nuclear Operator	12/14/94
Larry A. MOFFATT	Shift Operations Technical Advisor	02/07/95

Evidence

1. FIELDS stated that in May 1994, during an outage, a test was conducted and it was suspected that the curve (103B) was not accurate (Exhibit 8, p. 6).
2. FIELDS stated that Problem Report 94-149 was written to express concerns about the accuracy of curve-103B (Curve 8 of OP-103B) (Exhibit 8, pp. 6-7).
3. FIELDS stated that Nuclear Engineering (NPTS) responded to Problem Report 94-149 by letter indicating Engineering had determined that operating the makeup tank at the elevated pressures that they wanted was acceptable, and that operating there was a conservative place to be (Exhibit 8, p. 9).

4. FIELDS stated that an NPTS representative asked him, since his shift personnel were the ones concerned about the makeup tank overpressure issue, if there was anything to add or any response they would like to make before the problem report was closed out (Exhibit 8, pp. 9-10).
5. FIELDS stated they, as a shift, without talking to management, decided to demonstrate the curve was not accurate (Exhibit 8, p. 10).
6. FIELDS stated the shift members came to him and expressed what they would like to do (Exhibit 8, p. 11).
7. FIELDS stated they decided to bring the makeup tank to its maximum level of 86 inches and maximum pressure and then bleed the volume down just to its low limits of 55 inches (Exhibit 8, pp. 10-11).
8. FIELDS stated they planned to plot the response of how the actual system would respond, how the overpressure on the makeup tank would actually look on actual high pressure injection, or other things (Exhibit 8, pp. 10-11).
9. FIELDS stated that the shift reviewed OP-402. Nothing in the procedure prohibited the operators from operating the makeup tank from 86 to 55 inches (Exhibit 8, p. 12).
10. FIELDS stated that as a shift, it was proposed to raise the makeup tank level to 86 inches and increase makeup tank pressure to the limit of Curve 8 (103B). The makeup tank would then be decreased to 55 inches and pressure response of the makeup tank would be plotted (Exhibit 8, p. 13).
11. FIELDS stated the question was asked what covered this evolution and it was decided OP-402 provided adequate guidance (Exhibit 8, p. 13).
12. FIELDS stated nothing outside of normal operation of the makeup tank was proposed. The question was raised whether they wanted to bleed below 55 inches (Exhibit 8, p. 13).
13. FIELDS stated they decided that a test procedure would be required to proceed outside the normal operating limits of OP-402. Therefore, the bleed was stopped at 55 inches (Exhibit 8, p. 13).
14. FIELDS stated that "pre-job" discussion with the operators in the control room established what actions would be performed and which instruments would be monitored (Exhibit 8, p. 14).
15. FIELDS stated they expected the makeup tank pressure high annunciator alarm to come in -- into alarm (Exhibit 8, p. 14).
16. FIELDS stated that as a precaution and understanding the bases of Curve 8 (103B), the auxiliary nuclear operator, which in this case was ATKINSON, was stationed in the auxiliary building to vent the makeup tank in case of loss of coolant accident occurred (Exhibit 8, p. 14).
17. FIELDS stated that a third licensed operator (STEWART) was in the control room to plot the pressure and level of Curve 8 (Exhibit 8, p. 14).

18. FIELDS stated the evolution was started, data taken, and makeup tank level and pressure restored over a 32-minute timeframe without incident. The collected data was plotted and became the basis of Problem Report 94-267 (Exhibit 8, p. 14).
19. FIELDS stated there were procedures to follow when an annunciator alarm sounds on the main control board (Exhibit 8, p. 24).
20. FIELDS stated that when a makeup tank overpressure condition exists that the procedure called for closing valves that let hydrogen in thus reducing pressure (Exhibit 8, p. 24).

INVESTIGATOR'S NOTE: Closing the valves does not reduce pressure, it maintains current pressure. The hydrogen has to be manually vented. That is why the operator (ATKINSON) was stationed in the auxiliary building.

21. FIELDS stated that they expected the annunciator alarm when they pulled the annunciator response procedure (Exhibit 8, p. 25).
22. FIELDS stated they were going to get their data in the 35 minutes they were in the unacceptable region of the curve (Exhibit 8, p. 25).
23. FIELDS stated that as a precaution in case of an unrelated loss of coolant accident, they placed an operator in the auxiliary building to vent the pressure off the makeup tank if told to do so (Exhibit 8, p. 25).
24. FIELDS stated that placing an individual in the auxiliary building was an adequate safeguard to vent pressure if needed (Exhibit 8, p. 26).
25. HALNON stated the Operations supervisor (FIELDS) did not have the authority to violate an operating curve (Exhibit 11, p. 16).
26. HALNON stated the fact they had someone in the auxiliary building to vent pressure indicated they anticipated the alarm could come in (Exhibit 11, p. 14).
27. Van SICKLIN stated that prior to the evolution, they (operators) pulled the "AR [alarm response]" which stated they were to vent the makeup tank when the alarm annunciated (Exhibit 14, p. 10).
28. Van SICKLIN stated the alarm annunciated and it was agreed that a response would not be made to vent the tank until it got to 55 inches (low point on the curve) (Exhibit 14, p. 17).
29. Van SICKLIN stated the hydrogen pressure did go to the unacceptable region of the curve and that the alarm response procedure called for venting. However, this was not done while the points were plotted (Exhibit 14, p. 18).
30. Van SICKLIN stated they violated the operating procedure when they continued bleeding off water after the alarm annunciated (Exhibit 14, p. 19).

31. WEISS stated he was the assistant nuclear shift supervisor on duty that night and involved in the evolution they performed (Exhibit 9, p. 4).
32. WEISS stated he collected the data, evaluated it, and wrote the problem report on it (Exhibit 9, p. 4).
33. WEISS stated before the test FIELDS was the shift supervisor, Van SICKLIN was the chief and in the control room. STEWART was on the board, SMITH was on the board, and ATKINSON was in the auxiliary building (Exhibit 9, p. 5).
34. WEISS stated they discussed what they planned to do to put the makeup tank level at the high end of the normal operating level band and put makeup pressure to the curve and then bleed the makeup tank to 55 inches which is the lower limit of the curve (Exhibit 9, p. 5).
35. WEISS stated it was discussed that if pressure did go above the curve, that they should have somebody standing by in the auxiliary building ready to vent the makeup tank if any signs of reactor coolant system leakage occurred (Exhibit 9, p. 5).
36. STEWART stated he was the senior licensed reactor operator on the control board and responsible for manipulating the controls of the power plant, per the directions of the operators and senior reactor operators (Exhibit 12, p. 5).
37. STEWART stated Carl BERKSTROM, an FPC employee in the Engineering Department (prior to the September 5, 1994 "evolution") went to his shift supervisor (FIELDS) and said they were getting ready to close out issues (e.g., Curve 8) unless they (operators) had additional input (Exhibit 12, p. 6).
38. STEWART stated they, operators Van SICKLIN, WEISS, FIELDS, and SMITH on the midnight shift on September 5, got together and talked about the whole situation and what they could do to bring to light what their concerns were (Exhibit 12, p. 7).
39. STEWART stated it was suggested that they put the makeup tank on the curve, as management had wanted them to do all along, and stay up there and just bleed down to 55 inches and see what the pressure did (Exhibit 12, p. 7).
40. STEWART stated that being chief operator on the board, he wanted to be sure they had every contingency covered. They wanted someone dressed out in the contaminated area to bleed the pressure off (ATKINSON in the auxiliary building) (Exhibit 12, pp. 8-9).
41. STEWART stated there was a high makeup tank pressure alarm almost immediately when they started dropping pressure (Exhibit 12, p. 9).
42. STEWART stated he called out they had the high pressure alarm in, and the shift supervisors decided to continue the test and make sure there was someone "downstairs" ready to go in case "something" happened, and tracked it for test purposes (Exhibit 12, pp. 9-10).

43. When asked if he anticipated that the pressure limit of the curve would be exceeded, STEWART stated he did not want to say he anticipated it: he wanted to make sure he had all of the contingencies covered if something were to happen with a loss of coolant accident. He wanted to protect the makeup pumps at all costs (Exhibit 12, p. 11).
44. With regard to the annunciator response, STEWART stated it tells you to bleed the pressure, reduce pressure back to within the specs of the curve, and there is no timeframe given for that (Exhibit 12, p. 12).
45. STEWART, when asked if he was concerned with operating outside the curve being a procedure violation, stated he thought the crew discussed maybe being outside of an FPC procedure (Exhibit 12, p. 13).
46. STEWART stated that Curve 8 was the procedure violated (Exhibit 12, p. 13).
47. ATKINSON stated he was (at the time of the evolution) the auxiliary building operator and his duties were to follow the rules of -- or the direction of the board operators and the senior reactor operators on duty that night (Exhibit 10, p. 4).
48. ATKINSON stated his only participation was as primary plant operator. He was directed by the board operators to stand by to vent the makeup tank should the need arise (Exhibit 10, p. 4).
49. ATKINSON stated he did not normally stand by to vent the makeup tank because the valve that they have to open to vent the makeup tank is in a radiation area. Normally they (operators) don't stand by in that area (Exhibit 10, p. 7).
50. ATKINSON stated he was ordered to be there (auxiliary building) by the board operator in case they needed to vent the makeup tank (Exhibit 10, p. 7).
51. SMITH stated that on the midnight shift she was assistant to the chief, STEWART, assisting him on the control board (Exhibit 13, p. 5).
52. SMITH stated they did get the alarm in for makeup tank pressure but knew it was coming because of the evolution they were performing (Exhibit 13, p. 5).
53. MOFFATT stated as shift Operations technical advisor his duties consist of conducting administrative activities related to plant Operations and be available to provide reactor operations advice to the shift supervisor if needed (Exhibit 15).
54. MOFFATT stated that no one on the midnight shift told him they were going to conduct the evolution or asked for any advice about the evolution (Exhibit 15).

Investigator's Analysis

Based on the interviews of reactor operators ATKINSON and SMITH, it was apparent to the OI investigators that they were not a part of the decision-making process and were following the directions of the senior operators and supervisors.

Conclusion

The midnight shift operators FIELDS, WEISS, Van SICKLIN, and STEWART, on September 5, 1994, deliberately violated plant procedure when they exceeded the allowable makeup tank overpressure and failed to take appropriate action to reduce makeup tank overpressure.

SUPPLEMENTAL INFORMATION

This matter was referred to the Department of Justice on March 22, 1995. William P. SELLERS, Senior Legal Advisor for Regulatory Enforcement, General Litigation and Legal Advice Section, Criminal Division, stated he declines prosecution in lieu of civil remedies available to the NRC.

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LIST OF EXHIBITS

<u>Exhibit No.</u>	<u>Description</u>
1	Investigation Status Record, dated November 29, 1994.
2	AI-500 "Conduct of Operations" page 134.
3	OP-402, Makeup and Purification System.
4	OP-103B, Plant Operating Curve 8.
5	Logbook Entry of September 5, 1994.
6	FPC Letter to NRC, dated December 19, 1994, with attached LER 94-009-00.
7	Newly Plotted Curve.
8	Transcribed Interview of FIELDs, dated December 1, 1994.
9	Transcribed Interview of WEISS, dated December 1, 1994.
10	Transcribed Interview of ATKINSON, dated December 14, 1994.
11	Transcribed Interview of HALNON, dated December 1, 1994.
12	Transcribed Interview of STEWART, dated December 1, 1994.
13	Transcribed Interview of SMITH, dated December 14, 1994.
14	Transcribed Interview of Van SICKLIN, dated December 14, 1994.
15	Report of Interview with MOFFATT, dated February 7, 1995.

EXHIBIT 10

B/g

REVIEWED BY NRC
DATE 12-14-94
James T. Atkinson

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

+ + + + +

OFFICE OF INVESTIGATIONS

INTERVIEW

-----X

IN THE MATTER OF: :

INTERVIEW OF : Docket No.

JAMES THOMAS ATKINSON : (not assigned)

:

-----X

Thursday, December 1, 1994

Conference Room 202

Crystal River Plant

6745 N. Tallahassee Road

Crystal River, Florida

The above-entitled interview was conducted at

10:07 a.m.

BEFORE:

JIM VORSE Senior Investigator

William McNULTY Investigator

CURT RAPP Reactor Engineer

CASE NO 2-94-036

EXHIBIT 10
PAGE 1 OF 14 PAGE(S)

1 APPEARANCES:

2 On Behalf of the Nuclear Regulatory Commission

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13 Reactor Engineer - NRC, Region II

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15 Crystal River, Florida 32629

16

17

18 On Behalf of the Interviewee, James Thomas Atkinson

19 GREG HALNON

20 Operations Manager

21 Crystal River Nuclear Plant

22

23

24

25

1 P-R-O-C-E-E-D-I-N-G-S

2 MR. VORSE: Good morning. My name is Jim Vorse.
3 I'm an Investigator with the Nuclear Regulatory
4 Commission. We are at the Crystal River Nuclear Plant at
5 the Nuclear Administration Building, Room 202. The time
6 is 10:07 a.m. Date December 1st, 1994.

7 We are here to interview Mr. Atkinson about the
8 incident, the experiment, deviation from procedure that
9 happened on September 7th, 1994, concerning the curve with
10 the make-up tank.

11 Present are myself, Mr. Bill McNulty, also an
12 Investigator with the Nuclear Regulatory Commission, Curt
13 Rapp, Reactor Engineer, NRC, Region II, and Mr. Greg
14 Halnon, who is the Operation Manager here at Crystal River
15 Nuclear Plant.

16 Mr. Atkinson, would you please give us your full
17 name and spell it for us.

18 MR. ATKINSON: James Thomas Atkinson,
19 A-T-K-I-N-S-O-N.

20 MR. VORSE: And what's your job here?

21 MR. ATKINSON: I'm a nuclear operator.

22 MR. VORSE: Would you explain your duties to us
23 and how long you've been doing this.

24 MR. ATKINSON: I have had my license since
25 December 3rd, 1993. And my duties are to maintain safely

1 an efficient operation of Crystal River Unit III.

2 MR. VORSE: Would you -- Were you on the shift,
3 on the midnight shift on September 7th, 1994, when the
4 curve incident happened?

5 MR. ATKINSON: Yes, I was.

6 MR. VORSE: Okay. Can you explain your
7 participation in this event?

8 MR. ATKINSON: At that time I was the auxiliary
9 building operator, which is the primary plant. And my
10 duties were to follow the rules of -- or the direction of
11 the board operators and the SROs on duty that night.

12 MR. VORSE: Okay. My understanding is that
13 there was a -- not an experiment, but a slight deviation
14 from the make-up tank curve within the procedure, OP
15 procedure 103B.

16 Can you explain your participation in that?

17 MR. ATKINSON: The only participation that I had
18 in that was to go by what the board operators directed me
19 to do as the primary plant operator, and which mainly
20 involved bypassing a regulator for putting hydrogen into
21 the make-up tank and standing by to vent the make-up tank
22 should the need arise.

23 MR. VORSE: Did you think this was unusual?

24 MR. ATKINSON: No. We fill and vent the make-up
25 tank basically weekly to get the non-condensibles out of

1 the RCS.

2 MR. VORSE: Did you express any reservations
3 about conducting this test on September 7th? Did you
4 bring --

5 MR. ATKINSON: No, I did not.

6 MR. VORSE: Were you aware at any time that this
7 test was outside the design basis?

8 MR. ATKINSON: No, sir, I wasn't.

9 MR. VORSE: Curt, you got any questions?

10 MR. RAPP: Yes. As a matter of fact, when you
11 said that you were sent down to the make-up tank area to
12 bypass the H2 regulator, hydrogen regulator, is that
13 routine that the hydrogen regulator is bypassed to add
14 hydrogen to the make-up tank?

15 MR. ATKINSON: Since they've come up with this
16 new curve we've had to bypass the regulator to achieve the
17 pressure in the make-up tank that they desire.

18 MR. RAPP: And which new curve is that?

19 MR. ATKINSON: That's the new 25 cc per kg
20 hydrogen in the RCS limit curve.

21 MR. RAPP: And before that it wasn't necessary
22 to bypass a regulator?

23 MR. ATKINSON: No. It's set at anywhere from 15
24 to 20 pounds and we usually just leave it in service.
25 There was no need to ever bypass the regulator.

1 MR. RAPP: A point of clarification. Are you a
2 licensed operator?

3 MR. ATKINSON: Yes, sir.

4 MR. RAPP: Okay. And you have an RO license.

5 MR. ATKINSON: That's correct.

6 MR. RAPP: Have you performed this evolution,
7 the hydrogen fill operation, on the make-up tank before?

8 MR. ATKINSON: Yes, sir, I have.

9 MR. RAPP: From the control room.

10 MR. ATKINSON: Yes, sir.

11 MR. RAPP: Okay. And how is that evolution
12 performed? Just a general description.

13 MR. ATKINSON: There's a make-up valve called
14 MUV-134 which is opened from the main control board. And
15 I have my auxiliary building operator go bypass the
16 regulator, which those are in line.

17 And whenever the make-up tank pressure gets to
18 the desired pressure, then I'll have him close off the
19 regulator and I'll close my isolation valve from the
20 control room.

21 MR. VORSE: This -- When you were posted in the
22 Aux building on the night of September 7th --

23 MR. ATKINSON: Right.

24 MR. VORSE: -- this was an unusual incident, was
25 it not? I mean, you don't normally do what you did.

1 MR. ATKINSON: Stand by?

2 MR. VORSE: Yeah.

3 MR. ATKINSON: No. I don't usually stand by to
4 vent the make-up tank because the valve that we have to
5 open to vent the make-up tank is in a radiation area. And
6 normally we don't stand by in that area.

7 MR. VORSE: Well, why -- Do you understand why
8 you were there?

9 MR. ATKINSON: Because I was ordered to be there
10 by the board operator in case they needed to vent the
11 make-up tank. That's the explanation I got from the board
12 operator.

13 MR. VORSE: Are you aware of anyone that
14 protested this test, that said it was not the right thing
15 to do because it was outside design basis?

16 MR. ATKINSON: No, I'm not.

17 MR. VORSE: You never heard that expressed by
18 anyone?

19 MR. ATKINSON: No, sir.

20 MR. VORSE: Throughout your whole experience on
21 that evening?

22 MR. ATKINSON: That's correct.

23 MR. VORSE: Bill, do you have anything?

24 MR. McNULTY: All right. Prior to going on
25 shift, Mr. Atkinson, were you aware that there was some

1 discussion between members of your shift and engineering
2 that there was a problem with the curve?

3 MR. ATKINSON: Well, let me explain one thing
4 right off the bat, is I was fairly new to this shift.
5 Okay? And prior to getting on that shift I didn't know
6 that there was any discussion. Okay?

7 I had been on this shift approximately, at the
8 most, three weeks. And one of those weeks was in recall.

9 The first I heard about the discussion was when I
10 first came to the shift. And then I wasn't clear on
11 exactly what it was all about. Okay?

12 So when it came, they wanted me to stand by in
13 the Auxiliary building. I knew that they had -- they were
14 doing some evolution. Okay? I wasn't super clear on what
15 they were going to do. I just knew that the shift
16 supervisor and the assistant shift supervisor and both
17 board operators were very clear on what their functions
18 were.

19 And with that understanding, I felt confident
20 that everything would go as they had planned.

21 MR. McNULTY: Was this evolution discussed with
22 you prior to the shift starting?

23 MR. ATKINSON: Just the basic functions of
24 pressing up the make-up tank and doing a bleed and
25 watching it follow the curve. That's -- It was like a

1 verification of the curve.

2 MR. McNULTY: Were you aware that they intended
3 to go outside the curve?

4 MR. ATKINSON: No, I was not.

5 MR. McNULTY: As far as standing by to vent the
6 make-up tank, why would you have to vent the make-up tank?

7 Under what circumstances would it have been
8 necessary to vent the make-up tank?

9 MR. ATKINSON: Well, in the case of a LOCA I
10 know that we would have to do that.

11 MR. McNULTY: And as far as you know, that was
12 the only reason that you were standing out there by the
13 valve?

14 MR. ATKINSON: Yes, sir.

15 MR. McNULTY: What circumstances could cause the
16 tank to receive that overpressure that would be necessary
17 to vent it in case of a LOCA?

18 MR. ATKINSON: I'm not sure I understand what
19 you're saying.

20 MR. McNULTY: Maybe I'm not asking the right
21 question.

22 Why would it be necessary to vent the tank?

23 MR. ATKINSON: Well, should the pressure be too
24 high in the make-up tank --

25 MR. McNULTY: Right.

1 MR. ATKINSON: -- and we did have a LOCA, I
2 would expect the level in the make-up tank with the
3 hydrogen overpressure to be significant to cause hydrogen
4 binding in the make-up pumps.

5 MR. McNULTY: What could cause the pressure to
6 build up to the point that you'd need to vent it in the
7 make-up tank?

8 MR. ATKINSON: There wouldn't be any additional
9 hydrogen going in there. There would just be the hydrogen
10 overpressure that was ~~additionally~~ ^{INITIALLY} on the tank.

11 MR. McNULTY: Right. And would that occur
12 because they had operated outside the curve?

13 MR. ATKINSON: Not necessarily. I think --

14 MR. McNULTY: There could be another reason for
15 that to occur?

16 MR. ATKINSON: I think maybe an incorrect
17 calculation somewhere could have constituted that.

18 MR. McNULTY: Do you see where I'm going with
19 that?

20 Do you have anything to add to that for the --

21 MR. RAPP: Well, the point being is -- is that
22 if you follow the curve --

23 MR. ATKINSON: Right.

24 MR. RAPP: -- and you stay in the acceptable
25 operations area, there should be no need to vent the make-

1 up tank; is that correct?

2 MR. ATKINSON: That is correct.

3 MR. RAPP: All right. So in performing this
4 evolution then it would be considered abnormal to have
5 someone stationed at an area to vent the make-up tank in
6 the case of an accident.

7 MR. ATKINSON: That's correct, also.

8 MR. McNULTY: Unless someone intended to operate
9 outside the acceptable limits.

10 MR. ATKINSON: I wouldn't say intended. I would
11 say --

12 MR. RAPP: Expected to operate outside the --

13 MR. ATKINSON: No. I wouldn't say expected. I
14 would say if by chance you happened to, which was -- I
15 guess they were trying to clarify whether or not they were
16 going to operate outside that curve, which I'm positive
17 they had no intentions of exceeding the curve.

18 MR. McNULTY: So you were just out there as a
19 just in case measure then?

20 MR. ATKINSON: I was the hands-on person.

21 MR. VORSE: When you first showed up on shift,
22 what was going on with the operators and the shift
23 supervisor?

24 Were they talking on this -- about this -- doing
25 this? Were they looking at any documents, looking at the

1 procedures? Did you see anything like that?

2 MR. ATKINSON: Well, I had a discussion with one
3 of the board operators that said that the issue had been
4 open for quite a while. And that's -- And he just kind
5 of give me a brief overview of what was going on, which I
6 guess I just wasn't that caught up with it, you know, like
7 the rest of them.

8 MR. VORSE: Who was that that briefed you and
9 what did he say?

10 MR. ATKINSON: His name was Mark Van Sicklin.
11 He's also a -- He's a chief nuclear operator. And he
12 just basically said that there's a concern concerning one
13 of the curves for make-up tank pressure. And that's
14 basically all he said.

15 MR. VORSE: Did he say what that concern was?

16 MR. ATKINSON: He just felt as though the curve
17 was inaccurate. That's what he explained to me.

18 MR. VORSE: Did he explain to you how they were
19 going to -- how they were going to find out how inaccurate
20 it was?

21 MR. ATKINSON: No. No.

22 MR. VORSE: Did anyone say, we're just going to
23 go ahead and conduct this experiment and we don't care
24 about regulations, procedures, anything like that?

25 MR. ATKINSON: No.

1 MR. VORSE: Well, Curt, you got any technicals
2 that you want to talk about?

3 MR. RAPP: No. That was easy.

4 MR. VORSE: Well, this will conclude this
5 interview. We appreciate you coming, Mr. Atkinson.

6 MR. ATKINSON: Certainly.

7 MR. VORSE: Did you come here freely and
8 voluntarily without any coercion?

9 MR. ATKINSON: Yes, sir.

10 MR. VORSE: Is there anything that you would
11 like to put on the record regarding what we've talked
12 about today to expand on it a little bit?

13 MR. ATKINSON: Not at this time.

14 MR. VORSE: Okay. Anyone else?

15 MR. McNULTY: No.

16 MR. VORSE: Okay. That concludes our interview.
17 It's concluded at 10:21 a.m.

18 Thank you.

19 (Whereupon, the proceedings were concluded at
20 10:21 o'clock a.m.)

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C E R T I F I C A T E

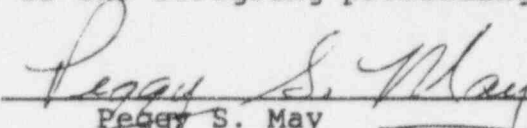
This is to certify that the attached proceedings
before the United States Nuclear Regulatory Commission in
the matter of:

Name of Proceeding: Interview of James Thomas
Atkinson

Docket Number(s): (not assigned)

Place of Proceeding: Crystal River, Florida

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



Peggy S. May
Official Reporter
Neal R. Gross and Co., Inc.

EXHIBIT 12

3/3

reviewed by me
Jack D. Stewart

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
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OFFICE OF INVESTIGATIONS
INTERVIEW

-----X
IN THE MATTER OF: :
INTERVIEW OF : Docket No.
JACK D. STEWART, JR. : (not assigned)
:
-----X

Thursday, December 1, 1994

Conference Room 202
Crystal River Plant
6745 N. Tallahassee Road
Crystal River, Florida

The above-entitled interview was conducted at
10:35 a.m.
BEFORE:

JIM VORSE	Senior Investigator
William McNULTY	Investigator
CURT RAPP	Reactor Engineer

1 APPEARANCES:

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18 On Behalf of the Interviewee, Jack D. Stewart, Jr.

19 GREG HALNON

20 Operations Manager

21 Crystal River Nuclear Plant

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25

1 P-R-O-C-E-E-D-I-N-G-S

2 MR. VORSE: The time is 10:35 a.m. We're at the
3 Crystal River Nuclear Plant Administration Building, Room
4 202. The date is December 1st, 1994, and we're going to
5 conduct an interview this morning concerning the deviation
6 from the curve of the make-up tank on September 7th of
7 1994.

8 I'd like to introduce everybody to the record.
9 I'm Jim Vorse, Investigator, Nuclear Regulatory
10 Commission, Office of Investigations.

11 Present also is Bill McNulty, Investigator,
12 Office of Investigations.

13 Mr. Curt Rapp, Reactor Engineer, NRC, Region II.

14 And Mr. Greg Halnon, who is the Operations
15 Manager here at the Crystal River Nuclear Plant, who has
16 been requested to attend this meeting by the witness.

17 I'd like you to introduce yourself, please.

18 Spell your full name and state your occupation.

19 MR. STEWART: My name is Jack Demar Stewart, Jr. *CAPITAL "M" 12-14-94*

20 I'm a Licensed Chief Nuclear Operator at Crystal River,
21 Unit III.

22 MR. VORSE: And would you describe your duties
23 to me, please.

24 MR. HALNON: And spell your name.

25 MR. STEWART: The spelling of my last name is

1 S-T-E-W-A-R-T.

2 My duties are to operate the nuclear -- Crystal
3 River Nuclear Power Plant within the guidelines of 10 CFR
4 Federal Codes pertaining to nuclear power plants, and to
5 operate under the guidance of the operating procedures
6 that had been approved by Florida Power Corporation.

7 MR. VORSE: How long have you been doing this?

8 MR. STEWART: I got my license in late 1986;
9 I've been working at Florida Power since 1983.

10 MR. VORSE: Can you describe to us what you were
11 doing the night of the midnight shift on September 7th,
12 1994?

13 MR. STEWART: I was the chief nuclear operator
14 on duty on the control board.

15 MR. VORSE: And what do you do at the control
16 board?

17 MR. HALNON: Can I clear one thing up real quick?

18 MR. VORSE: (Nods affirmatively.)

19 MR. HALNON: The problem report was written
20 dated the 7th, and the actual event that we're talking
21 about was on the 5th.

22 MR. VORSE: Okay.

23 MR. HALNON: Midnight shift of the 5th.

24 MR. VORSE: All right, I'm glad we got that
25 clarified. Okay.

1 MR. HALNON: And that's why we're going to get
2 you the log books of the 5th. I'm assuming that's what
3 you wanted.

4 MR. VORSE: Yes, that's what we want.

5 MR. McNULTY: Thank you.

6 MR. VORSE: Okay. Thank you for clearing that
7 up for us.

8 MR. HALNON: Sure.

9 MR. STEWART: I forgot the question.

10 MR. VORSE: Okay.

11 The question is, what exactly do you do at that
12 board -- well, I know this is a very complex thing, but on
13 the evening of September 5th, now, when we -- when we did
14 this test that occurred, what were your duties?

15 MR. STEWART: Well, I was the what you would
16 call the senior licensed reactor operator on the board, so
17 I was the person responsible for manipulating the controls
18 of the power plant, per the directions of the OPs and the
19 SROs.

20 MR. VORSE: Do you recall this test that was
21 conducted with the curve?

22 MR. STEWART: Yes.

23 MR. VORSE: Do you recall any discussion about
24 that test?

25 MR. STEWART: Oh yes.

1 MR. VORSE: Can you kind of tell us what that
2 discussion was?

3 MR. STEWART: Well --

4 MR. VORSE: And who was involved.

5 MR. STEWART: We had a concern about the make-up
6 tank overpressure that stemmed from a test, an SP-630 that
7 was run coming out of the refueling outage back in the
8 Spring. And we had documented our concerns via a problem
9 report and over the period of time between then and this
10 -- this evening there there was letters transpiring
11 between Engineering and Management and our shift as to
12 what was going on, what was, you know, the problems, how
13 we -- they were addressing our concerns.

14 And it got down to the point where there was a
15 letter that was put out just prior to this, a couple of
16 days, I don't remember the date, that said Engineering had
17 come up with the concerns that we didn't feel was being
18 addressed by Engineering properly, and that if there was
19 no other input, that they were going to close these
20 concerns out. I believe it was going to be that Friday.

21 So, Carl Berkstrum (phonetic) came to my shift
22 supervisor and said, you know, I know you guys are
23 involved in this make-up tank overpressure concern from
24 your testing SP-630; they're getting ready to close these
25 issues out unless you guys have some additional input.

1 And so we all got together. And the guys that
2 got together was Mark Van Sicklin, who is the one who's
3 been pushing the concern directly. He was another chief
4 operator on the chief's desk that night. Myself.
5 Christine Smith, who was the other licensed RO on the
6 board. And Rob Weiss, who was the assistant shifter. And
7 Dave Fields, who was the shifter.

8 And we talked about the whole situation, said,
9 well, what can we do that could bring to light what we're
10 doing, you know, what our concerns are here. And it was
11 suggested that we put the make-up tank on the curve, as
12 Management had been wanting us to do all along, and stay
13 up there and just bleed down to 55 inches and see what the
14 pressure did. And track it using the computer points and
15 the chart recorder itself.

16 So, we got to talking about, well, how can we do
17 this, do we have any procedural guidance that will let us
18 work with this. And we got out OP-402, and it was felt by
19 everybody on the shift that OP-402 covered everything that
20 we were going to do. So we had guidance to control us
21 through this evolution. So that's basically what we did.

22 MR. VORSE: Did anyone raise any concerns about
23 violating any procedures or being outside design basis or
24 express any reservations about conducting this test?

25 MR. STEWART: We knew that we didn't want to

1 violate any curves, especially design basis curves.
2 That's, you know, you don't ever violate a design basis
3 curve. And at that time it was not known to anybody that
4 that curve was, in fact, an actual design basis curve. We
5 don't operate on design basis curves. Florida Power's
6 policy has always been to come up with some sort of an
7 administrative curve below a design basis curve so that we
8 would always -- we may be in violation of a Florida Power
9 policy if something went wrong, but we would never be
10 challenging a design basis of the plant.

11 So had anybody up there known anything about that
12 being an actual design basis curve, we'd have never done
13 anything about it, said, ney, no.

14 MR. VORSE: Mr. Atkinson was station in the Aux
15 building in the event of a LOCA, is my understanding.

16 MR. STEWART: Yes.

17 MR. VORSE: Are you aware of how that
18 transpired?

19 MR. STEWART: Yes. Being the chief operator on
20 the board I was wanting to make sure that we had every
21 contingency covered, that, you know, Murphy's Law, what
22 can go wrong will go wrong routine. So, I wanted to make
23 sure that if something happened with the plant and we had
24 a LOCA and we're coming down on this curve and all of a
25 sudden the thing doesn't act the way everyone's hoping it

1 and expecting it to, because Engineering has said that it
2 should follow this and we had indications from SP-630 that
3 it may not, so I wanted to make sure that if, in fact, it
4 didn't, that I had somebody down there ready to go,
5 because he had to get dressed out, get into a contaminated
6 area in order to be able to bleed the pressure off. So I
7 didn't want to challenge the plant ¹²⁻¹⁴⁻⁹⁴ So, we -- making sure
8 that we had somebody available ready to go and not tied up
9 doing anything else.

10 MR. VORSE: When you were letting the level down
11 did you get any annunciators?

12 MR. STEWART: Yes, we got the high make-up tank
13 pressure alarm almost immediately when we started dropping
14 pressure.

15 MR. VORSE: And what did you --

16 MR. STEWART: Or that level.

17 MR. VORSE: Did you follow procedure to react to
18 that annunciator?

19 MR. STEWART: Yes, we did.

20 MR. VORSE: What was -- do you remember
21 basically what you did?

22 MR. STEWART: Well, I called out that we had the
23 high pressure alarm in and the shift supervisors noted
24 that, okay, we understand that, go ahead and continue
25 running the test, make sure you've got Dave or the boys

1 downstairs ready to go in case something happens, and we
2 tracked it for the test purposes.

3 MR. VORSE: Did you ever hear anyone -- I may be
4 repeating myself here -- protest doing this test?

5 MR. STEWART: Excuse me?

6 MR. VORSE: Did anyone protest the conduct of
7 this test? Did anyone say, this is not right, we should
8 not do that?

9 MR. STEWART: No.

10 MR. VORSE: And give a reason?

11 MR. STEWART: No.

12 MR. VORSE: Okay. To your knowledge there was
13 no one else other than your shift involved in this
14 decision to conduct this test?

15 MR. STEWART: To my knowledge, no.

16 MR. VORSE: Curt, do you have any technical
17 questions you want to ask?

18 MR. RAPP: Is this the first time this situation
19 or this question about the accuracy of this curve has come
20 up, to your knowledge?

21 MR. STEWART: No, sir, no, we've brought this up
22 many times, starting from right after that SP-630. They
23 -- Engineering made a comment that both curves were going
24 towards zero. So, first they would look like they were
25 merging. And when we looked at the way the curves were

1 and the way they were interacting we said, we don't
2 believe that that's true.

3 MR. RAPP: What about prior to the performance
4 of SP-630? Was there any discussion about the accuracy or
5 the applicability of this curve?

6 MR. STEWART: I don't know that for a fact, but
7 I've heard rumors, but I don't want to comment on rumors.

8 MR. RAPP: Is it a routine evolution or
9 routinely to post someone at the make-up tank at that area
10 in order to vent the make-up tank during a hydrogen fill
11 operation?

12 MR. STEWART: During hydrogen fill --

13 MR. RAPP: Yeah.

14 MR. STEWART: -- operation?

15 MR. RAPP: If you're having to add hydrogen.

16 MR. STEWART: No. We don't anticipate
17 challenging any curves.

18 MR. RAPP: But in this case you did anticipate
19 that you would exceed the pressure limit of the curve?

20 MR. STEWART: I don't want to say that I
21 anticipated it, I wanted to just make sure I had all
22 contingencies covered if something were to happen with a
23 LOCA. I want to protect the make-up pumps at all costs.

24 MR. RAPP: Now back to the overpressure alarm.
25 Whenever you receive that alarm what actions do you take

1 and what's the time frame that you execute these actions?

2 MR. STEWART: The actions tell you to bleed the
3 pressure off just in basic -- you guys have got copies of
4 the OP-402 someplace, I think. Dave Fields may have had
5 them when you were talking to him.

6 But it did base -- the AR basically tells you to
7 bleed the pressure, reduce pressure back to within the
8 specs of the curve, and there's no time frame given for
9 that.

10 MR. RAPP: So generally speaking, how soon do
11 you take that action?

12 MR. STEWART: As soon as we got down to the 55
13 inches, which is as low as we were going to take the make-
14 up tank for OP-402, we started to comply with those
15 actions.

16 MR. RAPP: Okay. Maybe I didn't clarify
17 something. Not even if with regard to the test that's ran
18 just as a normal operational issue, when you receive this
19 overpressure alarm, when do you execute the action to
20 relieve that overpressure condition?

21 MR. STEWART: That would depend upon what's
22 going on at the time with the entire plant. With that
23 curve, not knowing that that was a design basis curve, had
24 I had something else going on with the plant that may take
25 higher priority, it may take a couple of minutes for me to

1 get to it, but I would act on it as promptly as I could
2 without being extreme, I guess.

3 MR. RAPP: I think that's all I have here.

4 MR. VORSE: Bill?

5 MR. McNULTY: In your discussion in regards to
6 what procedures may cover this, were you concerned that --
7 that if you operated outside the curve that that would be
8 a violation of a procedure?

9 MR. STEWART: I think we mentioned that in our
10 discussion about running the test, that, you know, we may
11 be outside of an FPC procedure, but we had no idea that
12 this was a design basis curve. And --

13 MR. McNULTY: As far as being outside the
14 procedure, do you recall what procedure was mentioned?

15 MR. STEWART: The curve stands by itself in
16 OP-103 bravo, curve number 8. The only time it's
17 mentioned in O -- is in OP-402 when you're adding hydrogen
18 or nitrogen to the make-up tank.

19 MR. McNULTY: And what does it say there?

20 MR. STEWART: It says -- I don't want to try and
21 quote something off the top of my head, I'd have to get
22 the procedure out. It's documented --

23 MR. McNULTY: What's your understanding of what
24 it says, that you're not supposed to operate?

25 MR. STEWART: Keep -- keep it at the curve or

1 below.

2 MR. McNULTY: Okay. And does it say that you
3 have to take immediate action to --

4 MR. STEWART: No.

5 MR. McNULTY: -- to keep it at the curve or
6 below if you go outside?

7 MR. STEWART: No.

8 MR. McNULTY: To your -- that's your --

9 MR. STEWART: To the best of my knowledge, no,
10 it doesn't tell me that I have to do some immediate
11 dramatic actions to comply with this. Like I said,
12 nothing in anything we ever did led us to believe that
13 this curve was a design basis curve at the time we did the
14 test. Nothing.

15 MR. McNULTY: Curt?

16 MR. RAPP: No.

17 MR. McNULTY: Jim, do you have any other
18 questions?

19 MR. VORSE: I don't have any other questions. I
20 think we'll go ahead and conclude this interview at this
21 time. The time is --

22 MR. McNULTY: Does he want to add anything?

23 MR. VORSE: I'm sorry. Would you care to add
24 anything?

25 MR. STEWART: I have nothing to add at this

1 time.

2 MR. VORSE: Okay. Did you come here voluntarily
3 without being coerced?

4 MR. STEWART: Yes.

5 MR. VORSE: Okay.

6 MR. RAPP: Jim, let me ask one more question.

7 Let me clarify something.

8 MR. VORSE: Sure.

9 MR. RAPP: All right, is your license a reactor
10 operator license or a senior reactor --

11 MR. STEWART: Mine's a reactor operator license.

12 MR. HALNON: We have two reactor operator
13 licenses on the board. One is an RO or an NO
14 classification; one is CNO. The CNO is the senior guide.
15 We go by seniority, not by license.

16 MR. RAPP: Thank you.

17 MR. VORSE: Okay. We'll conclude the interview
18 at this time. The time is 10:50 a.m., December 1st.
19 Thank you very much.

20 (Whereupon, the proceedings were concluded at
21 10:50 o'clock a.m.)

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C E R T I F I C A T E

This is to certify that the attached proceedings
before the United States Nuclear Regulatory Commission in
the matter of:

Name of Proceedings: Interview of Jack D.
Stewart

Docket Number(s): (not assigned)

Place of Proceeding: Crystal River, Florida

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

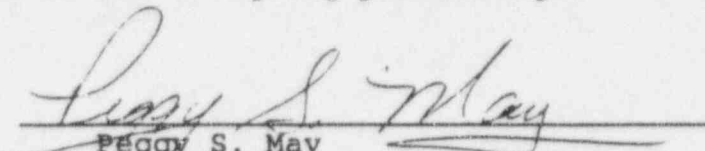

Peggy S. May
Official Reporter
Neal R. Gross and Co., Inc.

EXHIBIT 13

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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OFFICE OF INVESTIGATIONS

INTERVIEW

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IN THE MATTER OF: :

INTERVIEW OF : Docket No.

CHRISTINE SMITH : (not assigned)

: :

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*Reviewed by
Christine Smith
1-11-95*

Wednesday, December 14, 1994

Conference Room 202

Crystal River Plant

6745 N. Tallahassee Road

Crystal River, Florida

The above-entitled interview was conducted at

9:357 a.m.

BEFORE:

JIM VORSE Senior Investigator

CURT RAPP Reactor Engineer

EXHIBIT 13

1 APPEARANCES:

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13 On Behalf of the Interviewee, Christine Smith

14 GREG HALNON

15 Operations Manager

16 Crystal River Nuclear Plant

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1 P-R-O-C-E-E-D-I-N-G-S

2 9:35 a.m.

3 MR. VORSE: Good morning. Today is the 14th of
4 December 1994. We're going to interview Ms. Christine
5 Smith.

6 I would like everyone in the room here to
7 introduce themselves and give your name and your title,
8 please.

9 Curt, start with you.

10 MR. RAPP: Yes. My name is Curt Rapp, R-A-P-P.
11 I'm a Reactor Engineer, Region II, Division of Reactor
12 Safety.

13 MR. HALNON: I'm Greg Halnon, H-A-L-N-O-N. I'm
14 the Manager of Nuclear Plant Operations, Crystal River,
15 Unit III.

16 MR. VORSE: And my name is Jim Vorse. I'm an
17 Investigator with the Nuclear Regulatory Commission's
18 Office of Investigations, Region II.

19 Christine, would you please give us your full
20 name, spell it for us.

21 MS. SMITH: Spell the first name too?

22 MR. VORSE: Yes.

23 MS. SMITH: Okay. My name is Christine Smith.
24 C-H-R-I-S-T-I-N-E, Smith, S-M-I-T-H. And I'm an
25 Assistant Nuclear Operator, Crystal River, III.

1 MR. VORSE: Okay. And what are your duties as
2 assistant operator?

3 MS. SMITH: Normally, as an assistant nuclear
4 operator I work in the Aux Building, but I'm also a
5 licensed reactor operator, so I also work the Main Control
6 Board.

7 MR. VORSE: And what are your duties at the main
8 control board?

9 MS. SMITH: Normally taking log readings,
10 performing surveillance procedures and operating
11 procedures, starting up, shutting down the plant, handling
12 anything that might happen.

13 MR. VORSE: What type of license do you have,
14 again?

15 MS. SMITH: Reactor Operator's License.

16 MR. VORSE: And how long have you had that
17 license?

18 MS. SMITH: Approximately a year and a half.

19 MR. VORSE: Were you on the midnight shift of
20 September 5th, 1994?

21 MS. SMITH: Yes, I was.

22 MR. VORSE: Would you tell me who also was on
23 that shift.

24 MS. SMITH: Myself, David Fields, Robert Weiss,
25 Mark van Sicklen, Jack Stewart, and Jim Atkinson in Aux

1 Building.

2 MR. VORSE: What were you doing that night on
3 that shift?

4 MS. SMITH: I was the reactor operator on the
5 board. I was the assistant to the chief, who was -- how
6 do I say it, he was senior to me and pretty much
7 directing. I was like an assistant to him on the control
8 board.

9 MR. VORSE: Who was "him"?

10 MS. SMITH: Jack Stewart.

11 MR. VORSE: Would you describe your involvement
12 with the makeup tank curve evolution that happened that
13 night on September 5th.

14 MS. SMITH: Okay. My involvement was while Jack
15 Stewart was performing the evolution I was watching the
16 balance of the plant, to keep an eye on it and handle
17 anything else that might come in to distract them from
18 what they were doing. I was just watching the balance of
19 the plant.

20 MR. VORSE: Did you see anything unusual that
21 bothered you while you were performing your duties?

22 MS. SMITH: No, I did not. We did get the alarm
23 in for makeup tank pressure, but we knew that it was
24 because of the evolution they were performing. Other than
25 that, nothing was out of the ordinary.

1 MR. VORSE: Did anyone on your shift express
2 reservations about doing this evolution, something like
3 "this is a problem"?

4 MS. SMITH: No.

5 MR. VORSE: Did anyone say that the curve was
6 design basis?

7 MS. SMITH: No.

8 MR. VORSE: Did anyone consult with the shift
9 technical operations advisor, that you know of?

10 MS. SMITH: I do not know.

11 MR. VORSE: Curt, do you have anything you'd
12 like to ask Ms. Smith?

13 MR. RAPP: Yeah, let me go over a couple of
14 things.

15 Do you know what the makeup tank over pressure
16 reading was prior to performing this evolution?

17 MS. SMITH: I'm not -- I don't understand your
18 question.

19 MR. RAPP: What was the -- What was the makeup
20 tank pressure before they did this evolution? Was it
21 above or below the curve?

22 MS. SMITH: Below the curve.

23 MR. RAPP: Below the curve?

24 MS. SMITH: Well, it could possibly have been on
25 the curve because at the time we were being directed to

1 run right on the curve. I -- I can't recall exactly.

2 MR. RAPP: Okay. All right.

3 Is it -- Jim mentioned the design basis aspect
4 of this curve. Is that typical that when you're given an
5 administrative limit curve that that is also a design
6 basis limit?

7 MS. SMITH: No. This is the first case I've
8 ever heard of. I -- I never knew that it was design
9 basis.

10 MR. RAPP: When did it first come out that this
11 was a design basis limit?

12 MS. SMITH: Several months after the evolution.

13 MR. RAPP: Okay. Is this the first time that
14 the accuracy of this curve has been questioned?

15 MS. SMITH: Not that date. I know Mark van
16 Sicklen has had a concern for some time that the curve
17 might not be accurate.

18 MR. RAPP: Okay. And "some time" goes back to
19 how far?

20 MS. SMITH: I can't say. I can say
21 approximately eighteen months or so. I can't speak for
22 him. I'm not sure exactly what point they started
23 questioning.

24 MR. RAPP: Okay. That's all I have at this
25 time.

1 MR. VORSE: Okay. Ms. Smith, if you had known
2 that the curve was a design basis what would you have
3 done?

4 MS. SMITH: I would have reported it to my shift
5 supervisor. I would have said, you know, this is not a
6 conservation action to operate on a design basis curve.
7 We shouldn't be anywhere close to any design basis curves.
8 And I would have strongly suggested that we stay away --
9 operate away from the curve and look into the matter.

10 MR. VORSE: To your knowledge were any managers
11 other than your shift, or any managers above your shift
12 consulted with before this event took place?

13 MS. SMITH: I don't know.

14 MR. VORSE: Is there anything that you'd like to
15 clarify or discuss with us?

16 MS. SMITH: No, not at this time.

17 MR. VORSE: Do you have any other questions?

18 MR. RAPP: Yes, let me review a couple of items,
19 if I may.

20 You said you were in the control room --

21 MS. SMITH: Yes.

22 MR. RAPP: -- during this evolution. And your
23 position was -- was what? What was your position?

24 MS. SMITH: A reactor operator.

25 MR. RAPP: Reactor operator, okay.

1 In that regard then, as a reactor operator,
2 referring to A-I-500, and the part that I have
3 highlighted, would you take a look at that.

4 (Document handed to witness.)

5 As a reactor operator would that also be part of
6 your duties or your responsibilities?

7 MS. SMITH: Yes.

8 MR. RAPP: Okay. To ensure that administrative
9 limits in the plant are not exceeded?

10 MS. SMITH: Yes.

11 MR. RAPP: Okay. All right. Thank you.

12 That's all.

13 MR. VORSE: Okay. At this time I'd ask Ms.
14 Smith, has anyone forced you or coerced you into coming
15 here to this room today and promised you anything?

16 MS. SMITH: No.

17 MR. VORSE: Okay. At this juncture I'll go
18 ahead and terminate the interview, and thank you very much
19 for your time.

20 (Whereupon, the proceedings were concluded at
21 9:44 o'clock a.m.)

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C E R T I F I C A T E

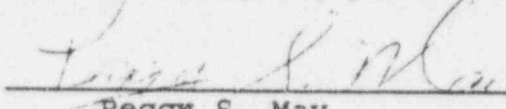
This is to certify that the attached proceedings
before the United States Nuclear Regulatory Commission in
the matter of:

Name of Proceeding: Interview of Christine Smith

Docket Number(s): (not assigned)

Place of Proceeding: Crystal River, Florida

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



Peggy S. May
Official Reporter
Neal R. Gross and Co., Inc.

EXHIBIT 14

BLS

1 UNITED STATES OF AMERICA
2 NUCLEAR REGULATORY COMMISSION

3 + + + + +

4 OFFICE OF INVESTIGATIONS

5 INTERVIEW

6 -----X

7 IN THE MATTER OF: ;

8 INTERVIEW OF : Docket No.

9 MARK van SICKLEN : (not assigned)

10 ;

11 -----X

12 Wednesday, December 14, 1994

13
14 Conference Room 202

15 Crystal River Plant

16 6745 N. Tallahassee Road

17 Crystal River, Florida

18
19 The above-entitled interview was conducted at
20 10:00 a.m.

21 BEFORE:

22 JIM VORSE Senior Investigator

23 CURT RAPP Reactor Engineer

EXHIBIT 14

PAGE 1 OF 47 PAGE(S)

24
25 REVIEWED BY ME, MARK VAN SICKLEN, ON 1-11-95

CASE NO. 2-94-036



1 APPEARANCES:

2 On Behalf of the Nuclear Regulatory Commission

3 JAMES VORSE, Senior Investigator

4 Region II NRC Office of Investigations

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6 Atlanta, Georgia 30323

7 CURT RAPP

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9 6745 N. Tallahassee Road

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11

12

13 On Behalf of the Interviewee, Mark van Sicklen

14 BRUCE WILLMS

15 Chief Nuclear Operator

16 Florida Power Corporation

17 Crystal River, Florida 32629

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1 P-R-O-C-E-E-D-I-N-G-S

2 MR. VORSE: Good morning. Today is the 14th of
3 December 1994 and the time is 10:00 o'clock a.m. We are
4 here to interview Mr. Mark van Sicklen.

5 And I'd like to go ahead and ask everybody
6 around the room to identify themselves and spell their
7 last name -- full name for me.

8 Curt, would you start out?

9 MR. RAPP: My name is Curt Rapp. C-U-R-T
10 R-A-P-P. I'm with Region II, NRC, Division of Reactor
11 Safety as a Reactor Engineer.

12 MR. WILLMS: My name is Bruce Willms, W-I-L-L-M-
13 S. Chief Nuclear Operator with Florida Power Corporation.
14 I'm here as a witness.

15 MR. VAN SICKLEN: My name is Mark van Sicklen,
16 M-A-R-K V-A-N S-I-C-K-L-E-N. Chief Nuclear Operator,
17 Florida Power Corporation.

18 MR. VORSE: And my name is Jim Vorse, V-O-R-S-E.
19 And I'm a Investigator with the NRC Office of
20 Investigations, Region II.

21 Mr. van Sicklen, would you please give me your
22 title again.

23 MR. VAN SICKLEN: I'm a Chief Nuclear Operator
24 at Florida Power's Crystal River Unit III, Nuclear Power
25 Station.

1 MR. VORSE: What type of license do you have?

2 MR. VAN SICKLEN: I have a Reactor Operator's
3 License.

4 MR. VORSE: And how long have you had this
5 license?

6 MR. VAN SICKLEN: I got licensed in December of
7 1990.

8 MR. VORSE: And would you describe your duties
9 to me, what you do?

10 MR. VAN SICKLEN: My duties as the chief nuclear
11 operator, I work between the Main Control Board and what
12 we call our clearance chief's desk. Depending on the
13 station that I'm at I'm either responsible as chief on the
14 board, you're the senior of two reactor operators on the
15 board and you're responsible for operating the nuclear
16 power plant, safe operation of the nuclear power plant,
17 and interfacing with all the shops to get the day-to-day
18 work done. You're responsible for the safety of the
19 plant.

20 Out on the chief's desk your responsibilities are
21 a little bit different. You're still a licensed operator
22 on the shift but your main function out there is writing
23 clearances for the plant and working with the shops to get
24 the daily work schedule done.

25 MR. VORSE: Would you describe in detail your

1 involvement in the September 5th, 1994, curve evolution on
2 the midnight shift.

3 MR. VAN SICKLEN: My involvement on that night,
4 my actual involvement for the evolution is I went in the
5 control room and I plotted makeup tank level ^{AND} ~~of~~ ^{pressure}
6 against the curve in OP-103.

7 MR. VORSE: Was this an unusual evolution, was
8 this different than what you normally would do?

9 MR. VAN SICKLEN: The evolution in itself, doing
10 a bleed ^{OF} ~~off~~ the makeup tank is not unusual. We operate
11 within 55 to 86 inches. We often do feeds and bleeds to
12 the reactor cooling ^{ANT} ~~ing~~ ^{MECH} system.

13 That night we specifically did a bleed that we
14 planned to do for other than, I guess, normal
15 circumstances. We didn't need to bleed the water out of
16 the makeup tank that night.

17 MR. VORSE: Was there some disagreement between
18 the operators and Engineering about the makeup curve?

19 MR. VAN SICKLEN: I have expressed concerns over
20 the makeup tank curve on where we're being told to operate
21 right now on the curve and I've been discussing those
22 differences between Operations and Engineering for
23 approximately 18 months.

24 There was disagreements, I guess that's the words
25 that you used, between the two departments. We were all

1 working toward one goal. I kept going up through my
2 management, which talks to Engineering, and we've had
3 different occasions throughout the year that I've gotten
4 together with the engineers to talk about it.

5 There was differences of opinion on whether or
6 not the curve was accurate.

7 MR. VORSE: Was there some effort to close out
8 an evaluation report on the difference of opinion between
9 reactor operators and Engineering on the, you know, the
10 disagreement that occurred? From Engineering --
11 Engineering was going to close out the issue about the
12 curve --

13 MR. VAN SICKLEN: There was a Problem Report 149
14 that up until this morning I thought -- I was told
15 differently this morning by one of the engineers, but up
16 until this morning we had a letter that was given to me, a
17 letter dated September 2nd, and it was handwritten on the
18 top, make any comments ^{on} ~~to~~ this and give it to Greg. Do
19 you have this September 2nd letter that I'm talking about?

20 MR. VORSE: No. Can I have it?

21 MR. VAN SICKLEN: It was -- it -- From what we
22 got out of this letter that we got on September 2nd, it
23 appeared that they were going to close out Problem Report
24 94-149, Action Number 8, corrective item.

25 MR. VORSE: Okay. And after you --

1 MR. VAN SICKLEN: And it looks like Engineering
2 -- "Engineering believes this curve is accurate and
3 reasonably conservative to protect the high pressure
4 injection pumps from ^{HYDROGEN} ~~hydrogen~~ (phonetic) gas intrusion, in
5 the worst case, large break LOCA, is the quote out of the
6 letter that came out on September 2nd.

7 MR. VORSE: And what was your opinion when you
8 saw that?

9 MR. VAN SICKLEN: My opinion at that point, when
10 I read that I brought it to my assistant shifter --

11 MR. VORSE: Who is that?

12 MR. VAN SICKLEN: Rob Weiss. And I said, hey, I
13 got this from Carl Bergstrom and he's got right on here
14 review and write comments to Greg Halnon. And that's
15 written draft recommendation.

16 And it was a letter to Bruce Hickie, the plant
17 manager, from Pat Hinman and Jerry Campbell. And I
18 brought it to him and said it looks like they've answered
19 all our concerns and they feel that it's accurate and
20 conservative.

21 MR. VORSE: So, what did you do then?

22 MR. VAN SICKLEN: At that point I told Rob Weiss
23 that I'm to the point where they've answered all our
24 questions and that's what they believe, then I'm done.
25 I'm -- All my concerns I have is -- is -- I'll give in.

1 I'll say they're fine.

2 What we did do is, he said, well, let's get a
3 copy of the calculation that they used for this curve. A
4 calculation that we brought up over the past few months
5 and it showed how they came up with this curve. So I, as
6 a chief nuclear operator out on the chief's desk, I can
7 leave the control complex, and I came over to the Admin
8 Building here I pulled that calculation out of the filing
9 cabinet and I made copies of it for me and Rob. And I
10 brought it back up to him and, again, I'm telling you
11 stuff that is before September 5th. It was -- we started
12 on midnight, whatever that Saturday, at midnight. Friday
13 at midnight, Saturday morning is when we started on
14 midnight. That's when I saw the letter.

15 So, that weekend we both -- I gave him a copy and
16 I took a copy next door and we started just paging ^{THROUGH} ~~him~~
17 paging ^{THROUGH} ~~him~~. His -- and I paged ^{THROUGH} ~~him~~ mine, and just
18 bringing comments back and forth to each other on some of
19 the assumptions made on that calculation that came up with
20 that curve. And basically we looked that over for two
21 days.

22 MR. VORSE: And then what did you decide to do?

23 MR. VAN SICKLEN: Then I asked Rob Weiss, and I
24 was over there at the chief's desk, that ^{THERE'S} ~~I'm~~ -- something
25 here doesn't look right to me, but they've gone over the

1 whole thing, Engineering has, and I believe they, you
2 know, I'm not -- I don't have anything personal to gain by
3 this or I don't think anybody in Engineering, I've nothing
4 personal with anybody in Engineering. I said, you know,
5 I'm still -- I'm done, this is what they've come up with,
6 this is fine, that's fine with me. I said, I'd like to
7 just do a bleed. Let's take OP-402 and it's within our
8 procedure, you know. They tell us to operate here, they
9 want us to operate on the curve, let's just bleed water.
10 And let's watch it go right down the curve like they say.
11 And he said, well, let me think about that and I'll go
12 talk to the shifter. And he went in and talked to David
13 Fields.

14 MR. VORSE: Did you all research thoroughly all
15 the procedures, all the administrative procedures and all
16 the other operating procedures before you made that, you
17 know, as you were thinking about --

18 MR. VAN SICKLEN: No, it was just an off-the-
19 cuff OP-402. He went in and talked to Dave Fields and
20 then I came in, he called me in and we all discussed it.
21 And we -- at that time we thought, well, we're just going
22 to bleed water out of the makeup tank, which is a normal,
23 it's not an unusual evolution, and we have a procedure to
24 do such. And Dave Fields said, you know, that sounds okay
25 with me, let's look. And Rob Weiss brought up, you

1 know --

2 MR. VORSE: When they looked, what did they do.

3 I'm sorry to interrupt you, but when they looked what --

4 how did they look?

5 MR. VAN SICKLEN: When I say "looked", I guess

6 thought about, we talked about. And out of that I know

7 Rob Weiss brought up, okay, let's -- is there anything

8 we're doing wrong here.

9 And we looked and we said, you know, I can't

10 think of anything, let's look at the AR. We pulled out

11 the AR form, we looked at that and that said okay, if this

12 thing does goes down the curve and maybe bobble to and fro

13 on the curve, if the alarm comes in what are the actions

14 on the alarm. And we looked at that and said, on the

15 actions on the alarm is to vent the makeup tank.

16 So we said, well, we have an idea it might not

17 follow the curve, is what Mark is saying, but we don't

18 know and Mark doesn't know, we really don't. And we've

19 given Engineering data in the past that we've gotten just

20 normal feeds and makeups to the makeup tank, that we've

21 plotted it on the curve and given them showing it starting

22 to the right of the curve and going to the curve.

23 So we looked at the AR and we said, well, the

24 actions of the AR says to vent the makeup tank. So, just

25 in case, let's get somebody on station and vent the makeup

1 tank in case it does go to the unacceptable reading in the
2 curve.

3 MR. VORSE: And how did you accomplish that?

4 MR. VAN SICKLEN: Well, we called Jim up and --

5 MR. VORSE: Jim who?

6 MR. VAN SICKLEN: Jim Atkinson, he was in the
7 Aux Building. And we said, okay, let's go ahead and under
8 the worst case let's get somebody ready to do that action
9 and let's bleed. And I'd already been given a letter from
10 Pat Hinman, that I think you got a copy of also. There
11 was differences, now we're operating by -- we have a
12 recorder on the board that tells you makeup tank level ^{AND} ~~of~~ ^{me} ~~me~~
13 pressure. And then we have the computer that you can get
14 minute by minute updates of what level of pressure are.
15 And they differ some.

16 And a few months earlier I brought that to the
17 attention of which way we're going to operate, because on
18 one here it looks like you can cross over the curve and
19 the other one it looks good. And again, that was REDAS
20 that we got back from SP-630 where we actually run the SP
21 where we did major changes in the makeup tank level of
22 pressure. And I plotted all these out on OP-103 and I
23 gave them to him.

24 And then they came back with, well, the
25 recorder's not accurate enough, but this is what we drive

1 by in the plant. So they came out with a letter that I
2 got. I guess Pat Hinman had talked to Dave Jones who told
3 me.

4 MR. VORSE: What's Pat Hinman's job again?

5 MR. VAN SICKLEN: Pat Hinman is --

6 MR. WILLMS: At this time he was the System
7 Engineer for makeup system.

8 MR. VORSE: Assistant engineer?


9 MR. WILLMS: System engineer.

10 MR. VORSE: System engineer. And he's the one
11 involved in this curve?

12 MR. WILLMS: From an engineering standpoint,
13 correct.

14 MR. VAN SICKLEN: Nuclear Plant Technical
15 Support, Nuclear Project Engineer.

16 MR. VORSE: Okay. So, let it reflect that Mr.

17 ~~HINMAN~~ ^{HINMAN} ~~Hammond?~~ 

18 MR. VAN SICKLEN: Hinman.

19 MR. VORSE: Hinman. Spell it for me, please.

20 MR. VAN SICKLEN: H-I-N-M-A-N.

21 MR. VORSE: Okay. And his job title again?

22 MR. VAN SICKLEN: His job title --

23 MR. VORSE: Then.

24 MR. VAN SICKLEN: -- as of -- I'm not sure what
25 it was then. I think he was the system engineer that --

1 this says -- I'm getting his name that I read you off the
2 September 2nd letter that he wrote. And it says Nuclear
3 Project Engineer, Nuclear Plant Technical Support.

4 I believe at that time he was turning over to
5 Phillip Saltzman who ended up taking over the makeup
6 system, as the makeup system engineer.

7 MR. VORSE: So he is the -- he is the chief
8 engineer in charge of this curve that --

9 MR. VAN SICKLEN: He was the one mostly that we
10 had been working with since probably just a little bit
11 before we even run SP-630 that we'd been working with as
12 far as the makeup tank over pressure curve.

13 Back in August 8th of 1994, I told him that I
14 hadn't heard anything about that all of a sudden the
15 recorder was not accurate enough, that I needed to drive
16 the plant by the computer updates. So he gave -- I asked
17 the shifter on duty, Garret Hebb was the one on duty at
18 the time, I said, did you hear anything that we need to
19 drive the plant by the computer updates. And he said no.
20 So I told Pat Hinman that, you know, he needs to get that
21 word to the people on shift then. And he wrote me a
22 little speed letter to me and Garret Hebb to tell us to
23 operate by the computer updates, not by the recorder,
24 because of discrepancies found on SP-630 between the two.
25 MR. VORSE: Did you disagree with that?

1 MR. VAN SICKLEN: Did I disagree?

2 MR. VORSE: With his decision?

3 MR. VAN SICKLEN: Well, me and Garret Hebb both
4 agreed that that wasn't ^Q acceptable, you know, we'll go
5 ahead and do that right now but it's not acceptable in all
6 plant areas. The reason why the main control board has
7 all the recorders on it is that recorders will give you
8 real time, you don't have to wait for updates. That's
9 what we normally drive the plant by. And that if that
10 recorder wasn't good enough, me and Garret Hebb -- I say
11 me and Garret Hebb, I don't know the letter that Garret
12 wrote but the words Garret used to me was we need the
13 recorder to be accurate enough, we need to fix that
14 problem, because that's what we drive the plant by.

15 MR. VORSE: Is there anything, Curt, you need to
16 get regarding the recorder?

17 MR. RAPP: No, huh-uh.

18 MR. VORSE: Okay. So we've got someone down in
19 the Aux Building to turn the valve in the event that
20 there's a problem. You have -- you're prepared to do the
21 annunciator alarm. And so I think that's where we left
22 it, we've got somebody down in the Aux Building and now
23 we're going to go through the evolution.

24 Can you describe that to me?

25 MR. VAN SICKLEN: All right. The evolution, we

1 all discussed what we were going to do. Nobody had any
2 reservations. We brought up that the annunciator alarm --
3 the annunciator alarm -- never mind there.

4 We just -- we went to OP-402 and we reviewed
5 OP-402. And in OP-402 we were clearly -- we had a
6 procedure to do the evolution as far as the bleeding. And
7 the curve isn't referenced in OP-402. Everything is
8 assumed that once you put hydrogen -- OP-402 addresses it
9 as far as the hydrogen addition to keep it on or to the
10 right of the curve. And once you're there the curve is
11 simply supposed to be a pressure versus volume curve. And
12 once you put it there you change volume, you'll always be
13 where you started. If you're on the right of the curve up
14 at 86 inches and it's just a pressure versus volume curve,
15 you take so much water out you'll just follow that curve
16 down. And you'll be right where you were at 55 inches.
17 Less pressure, but that's the whole basis of the curve.
18 It's just a pressure volume one, pressure volume two
19 curve.

20 So there was nothing in OP-402 for us to violate.
21 We said, okay, we got a procedure, now we'll just do the
22 bleed. It should just go right down the curve. That's
23 what we were looking for. And I was going to plot data
24 against the recorder. I plotted two charts, one against
25 the recorder and one against what I was getting from the

1 computer, to show, you know, maybe the computer's just
2 going to write it right down and maybe the recorder just
3 goes out to lunch. I don't know which one is going to be
4 the most accurate right now. That letter tells me the
5 computer is most accurate and until they fix the recorder
6 that's all we have to go by. Transient situations or if
7 the computer is not up you have to revert back to the
8 recorder.

9 So, Jim was stationed down there. Christine
10 basically was just -- she was going to watch balance of
11 the board. Dave Fields and Rob Weiss were there. And
12 Jack Stewart did the bleed.

13 The pressure was to the right of the curve.
14 Actually I think we added hydrogen to get it right up to
15 the curve. And then we took care of that. We let that
16 sit for a while. And then he pulled the handle out and
17 bled water out of the bleed tank and bled it down to 55
18 inches. When he did that the alarm did come in. And we
19 looked at pressure and it appeared that the recorder
20 itself was actually staying pretty close to the curve.

21 On the recorder again, when we started we were to
22 the right of the curve. Since we were operating by the
23 computer the computer was right on the curve. And there
24 was a discrepancy in the start places of the two instru-
25 ments, depending on which one you looked. It's the same

1 instrument. ~~Once the computer is valuable,~~ ^{Mess} then one goes
2 to the recorder.

3 And the recorder started going toward the curve
4 as we bled down. And the computer point, what it was
5 updating -- and again, we were in now a transient
6 situation as far as level and pressure were changing. Not
7 steady state anymore and we were waiting for updates.

8 So, in that case the computer's not as accurate
9 as far as when you get an update there's so many times to
10 get that and then it takes another update. Do you
11 understand what I mean?

12 MR. VORSE: (No verbal response.)

13 MR. VAN SICKLEN: And I was basically there just
14 plotting it on the curve to see if it was -- if it goes
15 down this curve, I was -- I didn't have any more safety
16 concerns. I was going to -- I was done.

17 The alarm came in and it stayed in. And we said,
18 okay, ^{now} ~~now~~ let's look at where we are. And depending on
19 which chart you're looking at, at one point we were back
20 into the unacceptable region, the curve. And then it was
21 basically a response. I don't think it even -- we didn't
22 talk about it, about us let's stop right here. Our game
23 plan, what we went into thinking was we'll just go from 86
24 to 55 and then if it's unacceptable we will do the ^{AR} ~~VAR~~ and
25 vent the tank.

1 And that's what we did. It went all the way down
2 to 55 inches and then Jack turned around and filled the
3 makeup tank back up. And he had Jim vent^{ed} the makeup tank
4 per ~~VAR.~~ ^{THE AR}

5 MR. VORSE: At any time during this evolution
6 did anyone express reservations about violating procedure?

7 MR. VAN SICKLEN: Again, at that time our mind-
8 ~~sight~~ ^{SET} (phonetic) was not in the same. This word came up
9 two weeks after. We did, you know, hindsight, everybody
10 looks back and says, well, now you run a test. That's
11 wasn't on ~~mindsight~~ ^{MIND SET} that night. On ~~mindsight~~ ^{MIND SET} we were just
12 doing OP-402 and we didn't violate that procedure.

13 It did go to the unacceptable region of OP-103
14 and the AR is what brought that about. The AR says, look
15 at OP-103 and if you're on the left vent the makeup tank.
16 And we did that. We didn't do it right away. We -- Like
17 I said, we were bleeding and data was jumping around. And
18 I was getting -- I was plotting points to the left of the
19 curve. No, nobody brought up, wait a minute, let's stop
20 here and vent the makeup tank. This is where we've been
21 told to operate and the last thing we got from Engineering
22 was it was safe to operate there.

23 So, once we started we said, well, nobody thought
24 like, hey, let's stop right here, right away, go vent the
25 makeup tank. We brought it down to 55 and then we did the

1 AR actions. Nobody made any reservations before that.

2 MR. VORSE: So you don't think that anybody
3 looked at the 103-B before, before you did the evolution?
4 Is that what you're telling me?

5 MR. VAN SICKLEN: We were referring to 103-B
6 before we did the evolution. I had copies of 103-B out
7 that I've plotted. As we bled the water down I plotted it
8 on 103. And the AR, when the AR came in when we bled,
9 that made 103 applicable. And 103-B is the procedure
10 that's saying that we violated -- that we did. What made
11 that applicable was the AR, and the actions got done on
12 the AR to vent it back to the right of the curve. But
13 nobody made -- we didn't talk about going over to the left
14 of the curve.

15 MR. VORSE: Did anyone ever bring up design
16 basis? Was that ever discussed?

17 MR. VAN SICKLEN: Nobody knew it was design
18 basis. And now what I'm hearing ^{now} ~~here~~, it took Engineering
19 two months after the evolution to find out that it was a
20 design basis curve. It was just an OP-103 curve to us,
21 that we were told to operate right on the line. Nobody
22 knew we were operating on the line of a design basis
23 curve.

24 Now I, you know, the past few weeks I keep
25 getting more and more data fed back. And again, I heard

1 this morning from an engineer that there's an actually --
2 they recalculated it again and there's actually another
3 curve to the left of the OP that's the actual design basis
4 curve. It varies from point three to point nine pounds.

5 So, I still, clear cut right now, we're assuming
6 OP-103 is the design basis curve is what we found out now,
7 a couple of months after our evolution. Whether that even
8 ends up tomorrow being a design basis curve, I don't know.
9 I can't answer that.

10 MR. VORSE: If you had known it was a design
11 basis curve would you have --

12 MR. VAN SICKLEN: I don't think that anybody,
13 licensed operator, if they knew that was a design basis
14 curve would have allowed it to go to the left. When
15 you're talking design basis curve you're talking to us,
16 that's like bringing the rods past their allowable limit.
17 That's just not acceptable to do that. You do whatever it
18 takes to stay to the right of that. And we would have
19 done that if we knew it was a design basis. If it was a
20 design basis and we knew that, I don't think anybody would
21 have been operating right on it.

22 MR. VORSE: This AR that you refer to, when you
23 read it did you -- you read it during this evolution?

24 MR. VAN SICKLEN: Well, we brought the AR out
25 before we did the evolution. And that's what in my mind

1 prompted us to say, okay, well, let's have Jim stationed
2 there in case -- in case it just takes off to the left and
3 we just stop it right there and vent the tank. We'll have
4 somebody there ready to perform the actions of the AR if
5 we need to.

6 MR. VORSE: Curt, do you have anything?

7 MR. RAPP: Let me check here.

8 Let me clarify a couple of points.

9 Was makeup tank pressure at the start of this
10 test, was it to the right of the curve, was it on the
11 curve? What was makeup tank pressure just prior to the
12 start of this evolution?

13 MR. VAN SICKLEN: Just prior to the start.

14 Depending on the instrument you used by the REDAS -- not
15 the REDAS, REDAS is afterwards. The computer points, it
16 was on the curve. The recorder showed it to the right of
17 the curve.

18 MR. RAPP: How much difference is there between
19 the computer point and the recorder point?

20 MR. VAN SICKLEN: Okay. One point six pounds.

21 MR. RAPP: All right. And how much difference
22 was there at the end of the -- at the end of the evolution
23 between the allowable limit and the curve, or the actual
24 makeup tank pressure and the curve?

25 MR. VAN SICKLEN: Say that again, you want the

1 difference between the two?

2 MR. RAPP: You got the 55 inches. What was the
3 difference between the data point and the allowable limit?

4 MR. VAN SICKLEN: Okay. It looks like what I
5 got plotted here at 56 inches on the computer point was
6 sixteen point three pounds. And what I got here is
7 fifteen pounds on the recorder.

8 MR. RAPP: Okay. So you're talking about, like,
9 one point three, one point five then, something like that.

10 MR. VAN SICKLEN: Right. (Nods affirmatively.)

11 MR. RAPP: Okay. All right.

12 MR. VAN SICKLEN: That's the difference between
13 the two.

14 MR. RAPP: Right.

15 MR. VAN SICKLEN: Does that answer your question
16 or do you want the difference between that and the curve
17 itself?

18 MR. RAPP: That's fine.

19 MR. VAN SICKLEN: I gave the difference of these
20 two.

21 MR. RAPP: Right. Yeah, that answers the
22 question.

23 Okay. So then back to the original question:
24 Did you have to add hydrogen in order to bring makeup tank
25 pressure on the limit curve?

1 MR. VAN SICKLEN: I believe when we started,
2 before the evolution got started Jack had to add hydrogen
3 to bring it right up on the curve, is what we did.

4 MR. RAPP: And he was using --

5 MR. VAN SICKLEN: He was using --

6 MR. RAPP: -- computer point --

7 MR. VAN SICKLEN: Right. He was using the
8 computer point is what we still had a letter from Pat
9 Hinman to use.

10 MR. RAPP: That is per the letter from
11 Engineering?

12 MR. VAN SICKLEN: Right.

13 MR. RAPP: Okay. All right.

14 Now, when you began the bleed, when you began the
15 bleed how soon did the alarm come in, the over pressure
16 alarm?

17 MR. VAN SICKLEN: I can't recall exactly. I
18 know it was soon after we started the bleed. Soon, again,
19 you know, looking back at the data we were actually
20 outside there 30 minutes. It didn't seem that to me up
21 there. It must have been some time that it was allowed to
22 stabilize or something that -- I didn't see in my mind up
23 there that wasn't the real time that it felt like to me,
24 but again, I can't -- I don't recall exactly when it did
25 come in.

1 MR. RAPP: Was this a continuous bleed operation
2 or did you --

3 MR. VAN SICKLEN: It was just a continuous
4 bleed. We pulled our handle out --

5 MR. RAPP: Okay.

6 MR. VAN SICKLEN: -- and we just opened up the
7 bleed valve. And it bleeds at the flow rate of what let
8 down ¹⁵~~the~~ set at, which is normally anywhere from 65 to 80
9 gallons per minute. And it's a 30.8 gallons per inch is
10 what the makeup tank level is.

11 MR. RAPP: So there was no whole point in there
12 in which you allowed the system to stabilize, the computer
13 point would catch up with the recorder point?

14 MR. VAN SICKLEN: The computer would catch up, I
15 don't know. I don't recall when we got to 55 inches
16 whether or not when we stopped the bleed we let it sit
17 there for awhile just to allow it to catch up before he
18 turned around and pulled the handle out, another handle to
19 feed the water back in.

20 MR. RAPP: All right.

21 MR. VAN SICKLEN: So I don't recall how that
22 went.

23 MR. RAPP: Jim touched on this briefly, but I
24 want to go back over it.

25 When it was recognized that makeup tank pressure

1 was not going to follow the curve, i.e., that the curve
2 was not accurate, it was not conservative, then why did
3 you continue to lower makeup tank level?

4 MR. VAN SICKLEN: Again, I wasn't the one
5 lowering level. I was plotting it and we were all working
6 together. We weren't sure whether what we were getting
7 was just ^{Bubbles} bubbles. I had a big discrepancy of what I was
8 seeing on the recorder and what I was seeing on the
9 computer, and wasn't sure whether maybe the computer was
10 hanging high because the next update would show how low it
11 got. It was in a transient condition. So every time you
12 looked up at the computer it could still have last minutes
13 update, which would have given you the higher pressure
14 where it wouldn't have looked accurate.

15 But even about 60, around 70 inches it looks
16 like, even on the recorder it looked like I was starting
17 to get data now. That was my first point to the left of
18 the curve. And at that point it wasn't clear to us that
19 pressure was actually there. It was still in a transient
20 type condition. And it just didn't, again, up front, we
21 decided, well, we'll just go to 55 inches, see what it
22 does, if it goes to the left we'll do the AR.

23 MR. RAPP: Okay. All right.

24 You said that this issue about the curve not
25 being accurate had been brought up prior to SP-630 being

1 performed. How far back did this issue with the accuracy
2 of this makeup tank curve go back?

3 MR. VAN SICKLEN: We've been having nuclear
4 safety concerns, me personally, since about May of 1993,
5 about 18 months is when we first started bringing the
6 issue up. That was when it first came to light that we
7 needed to put more hydrogen in the makeup tank.

8 The curve wasn't the major issue back then. The
9 major issue was we're being told to keep pushing this
10 thing up, pushing this thing up. Our biggest concern at
11 that point was, now we can't emergency borate anymore, as
12 far as what we as operators think is emergency borate.

13 We can always start a second makeup pump. Past
14 practice has been any time the running makeup pump is
15 running and you just go up and open up the BWST suction
16 valve, the BWST where it sits would always be the
17 governing head to the makeup pump. When you did that
18 you'd automatically start getting borated water.

19 When they start bringing about the issue let's
20 now, we had a high alarm set point of 15 pounds on the
21 makeup tank. We normally operated anywhere from, normally
22 you'd find it between five and maybe 12 pounds.

23 And now, we first got a letter back, the very
24 beginning chemistry recommended and I think we had a
25 violation come out of where we brought it up to 20 pounds.

1 And the alarm was in. And at that point, just us sitting
2 up on the board we started saying, wait a minute now, with
3 the makeup pump -- makeup tank at 20 pounds and the BWST
4 just sitting here vented to atmosphere, that makes it
5 different than what we're normally used to where we just
6 go open that valve now and nothing's going to come out of
7 BWST. With 20 pounds in that makeup tank it's all going
8 to come out of the makeup tank until you lower makeup tank
9 level now to what pressure equalizes.

10 So that was our first concern that we started
11 bringing up about just raising pressure in the tank. And
12 we got into that a little bit. There were some appendix R
13 concerns. How the original FSAR design basis had it in
14 there originally the regulator set at ten pounds. And I
15 think that's what we got a violation for. It was found to
16 be at 15 pounds.

17 And that come about and we started suspecting the
18 curve as being accurate because the more we were told to
19 operate it every time we did a change we found -- I found
20 -- that it didn't -- the plant dynamically -- what we were
21 -- in order to achieve some of the hydrogen, since we were
22 limited by the regulator you had to actually put hydrogen
23 in and then put more water in to squish the bubble, make
24 pressure go up. And every time we did that --

25 MR. VORSE: Excuse me. I'm sorry to interrupt,

1 but I though' I heard you say the curve was accurate. You
2 said that about six sentences ago. Did you mean to say
3 inaccurate or accurate? It sounded like you said
4 accurate.

5 Did you hear that, Curt, or did I just mis --

6 MR. VAN SICKLEN: If I said accurate I probably
7 meant inaccurate.

8 MR. RAPP: What was the whole statement?

9 MR. VORSE: It was that they first started
10 noticing that the curve was accurate, is what it sounded
11 like.

12 MR. VAN SICKLEN: Okay. Was not accurate, would
13 have been my correct.

14 MR. VORSE: Okay.

15 MR. VAN SICKLEN: When we put water in to try
16 and squish the bubble we'd start out right on the curve.
17 We'd put it right on the curve as much we could and then
18 we'd raise level and it would come up and go away from the
19 curve.

20 MR. RAPP: To the unacceptable.

21 MR. VAN SICKLEN: No, no, no. This is to the
22 acceptable.

23 MR. RAPP: To the acceptable side, okay.

24 MR. VAN SICKLEN: I know it's hard to get on the
25 recorder. I could draw it on the board to make sense to

1 you if you'd like.

2 MR. RAPP: I just want to clarify which way it's
3 going.

4 MR. VAN SICKLEN: Right. When we added water to
5 it would go -- it would start out on the curve and
6 continue to the right, now, of the curve, more in the
7 acceptable region and not ride the curve.

8 MR. RAPP: Okay. And that was brought to
9 Engineering's attention, that this response was not
10 following the predicted curve whenever you raised level?

11 MR. VAN SICKLEN: That's correct. And then we
12 went into the outage. We'd try, we had to change over
13 management and we were trying to bring our new management
14 up to speed, our immediate management, the plant man --
15 our operations manager, up to speed on our concerns since
16 he was taking over in the beginning of this year.

17 I had a few conversations with, I guess,
18 Engineering. And I don't know whether at that point --
19 no, I know at that point I didn't talk to the NRC yet.

20 We went into the outage and unless you're doing
21 the outage you don't put hydrogen in there. Toward the
22 end of the outage we run SP-630. And SP-630 is a full
23 flow test of the makeup system, the makeup pumps where you
24 take the makeup pump and you bring it all the way up to
25 540 gpm. That's a full flow verification type test.

1 But out of that I was the one on the board
2 reading the SP. I had two operators, one on each side of
3 the ES control and the makeup valve. And we were bringing
4 up flow and as we did so, because we were running, we down
5 to 20 feet in the BWST, we only started with an initial 12
6 pounds in the makeup tank. And as we brought level down
7 it came all the way down to 18 inches, which 55 is our
8 normal operating limit, now levels going all the way down
9 18 inches before it started taking water from the BWST.
10 And out of that data I went over and I got the chart
11 recorder and I brought this back and I took this against
12 103 and I started making plots of each makeup pump run.
13 Because now we had a bunch of data where we started at 70
14 inches and went all the way down to 18 inches in the
15 makeup tank. And I plotted all that up.

16 And on July 19th, we had another meeting with
17 Engineering that they were trying to resolve our concerns.
18 And our Management -- we didn't do much dealing with like
19 my immediate supervisor any more. The dealings were
20 basically with, I guess, our Management getting with
21 Engineering saying come talk to the operators. And I sat
22 down, me, another operator, Carl Bergstrom, Pat Hinman,
23 and Steve Rowe.

24 MR. VORSE: Okay, who -- what are the job titles
25 for each one of these people?

1 MR. VAN SICKLEN: Myself, I was chief nuclear
2 operator. There was another operator there. Carl
3 Bergstrom at that time was -- he was just going into a
4 different title I guess. He was going from a shift
5 supervisor to what he is today. He's a manager nuclear
6 plant engineer in, like, support shift. He's like Greg
7 Halnon's assistant. He's got a manager title like Greg
8 Halnon. And he sat in as like a third party. And we had
9 Pat Hinman, who was at that time a systems engineer. And
10 Steve Rowe, who I think at that time Steve Rowe was still
11 assigned to operations as an ops engineer. But he had
12 expressed some concerns to me personally that he'd brought
13 up over the makeup tank issue back in the late '80s.

14 So at that meeting we all sat down, and me and
15 the other operator gave them -- I gave them all the curves
16 I'd plotted from SP-630. We'd give them curves that we
17 just plotted from doing routine adds to the makeup tank.
18 And we showed them that it was starting way to the right
19 and was coming to the curve.

20 And actions items out of that meeting was going
21 to be they were going to take a look at the curve and
22 independently Pat Hinman and Steve Rowe were going to do
23 independent calculations to verify the calculations that
24 were done. The calculations itself was done I believe by
25 Gilbert. I'm not sure. I got that calculation again.

1 They were going to do both independent calculations.

2 We talked about to satisfy our concerns the
3 possibility of bringing back what we know as makeup valve
4 64. That's a valve that at one time had been in the
5 system. It is between the makeup tank and the makeup
6 pumps. So it's a valve that you can shut and then all of
7 a sudden the makeup pump can't suck off from anywhere else
8 but the BWST. You can isolate your makeup tank and your
9 hydrogen out of the system.

10 That valve erratically, due to the different way
11 I guess it was designed -- all the facts I don't know
12 here, so this is my opinion -- it had gone shut is the
13 fact. I guess ~~I~~^{IT} and had burned up a makeup tank
14 before. Normal operating, I guess, while we were doing
15 testing on ES-~~1~~^{AQ} side, ES, it was an ES control valve
16 engineering safeguards. One side, I guess, had made it
17 gone closed. I'm not sure whether that's a fact or not.
18 The valve had gone closed and we'd burned up a makeup
19 pump.

20 So, the plant had disabled the valve. We took
21 makeup ~~about~~^{VALVE} 64 basically out of the system. We took all
22 the controls off vent as far as it still has an actuator
23 up there but it doesn't have any air to it. And it's just
24 a chained open valve now.

25 So we don't have the ability here at the plant

1 now to isolate the makeup tank. The makeup tank during an
2 ES actuation when the BWST suction valve's open we just go
3 to an equilibrium with the BWST.

4 We'd given all this to them at the July 19th
5 meeting. And they were going to get back to us. I never
6 heard .. word back from them and it was probably a month
7 later. And I asked the other operator and he'd heard a
8 little bit back. And I said, you know, I'm still not
9 satisfied with this. So I brought it up again to Greg
10 Halnon. And I called Greg Halnon in there and the number
11 one thing on my list is, you know, I'm still not getting
12 any feedback back from Engineering on all the data that we
13 keep giving them. And he said, okay, he'll, you know, get
14 somebody to come see me.

15 And that's about the time frame that now I said,
16 okay, let me at least go talk to somebody else. And I
17 talked to the resident NRC.

18 MR. VORSE: Who is that?

19 MR. VAN SICKLEN: Todd Cooper. And I told him,
20 you know, I got some concerns over this curve and I don't
21 think it's accurate right now. And he listened to me, and
22 it was ^{on} four different occasions. I think by the second
23 time I brought it up to him again, he assured me that he
24 put it on his hit list every day, or something, that he'll
25 keep track of, he's going to start asking Management

1 questions on it to get it resolved for me.

2 And then I basically didn't hear very much back
3 at all until I saw that September 2nd letter. I talked to
4 Todd one more time on what my other options would be to
5 take it any further. And we then went and talked off the
6 record for a little bit.

7 At that point I had still not decided to make a
8 allegation against my company. And then I saw the
9 September 2nd letter I guess was the next letter that come
10 out. That brings us to the present.

11 MR. VORSE: So, you made extensive efforts to
12 bring all this to the attention of someone to get it
13 right. And when you plotted the curve during the
14 September 5th evolution were you right?

15 MR. VAN SICKLEN: I was -- I feel that the data
16 that we gained from what we did was very useful as far as
17 I was right. And hopefully our whole intent, it was not
18 at a personal level. There's nothing to be gained here
19 except for nuclear safety. That's the only motivation
20 here.

21 I understand Management has pressures and
22 Engineering might have pressures where they feel that they
23 need to do something. But that's definitely not put on me
24 as a operator. I don't feel those pressures from my
25 management. They might tell me, yes, you will operate on

1 the curve; but I basically speak freely. And nobody's
2 told me I can't. So, there was nothing personal between
3 me or anybody else. Our whole intent when we did plot
4 that curve and we stopped at 55 was I was right and now we
5 do have a serious nuclear safety concern here. And we
6 wrote the problem report on it. And we gave the problem
7 report back and we said, you know, you know, this
8 shouldn't even be tacked on to Problem Report 149 that
9 they're about to close. Let's write up another one and
10 say, you know, here we simply did a makeup tank bleed and
11 about half-way through on the makeup tank recorder you can
12 see that it clearly is not following the curve.

13 MR. VORSE: What problem report number is that,
14 do you know?

15 MR. VAN SICKLEN: I think it's 267. If you need
16 to know for sure I can get one. I don't have the pack
17 here with me.

18 MR. VORSE: I've got -- here, I have it with me.
19 Would you take a look at that and tell me if that's the
20 one you talked about?

21 MR. VAN SICKLEN: (Examining document.) This
22 is the problem report that I mentioned that we --

23 MR. VORSE: This is Problem Report 94-0267.

24 MR. VAN SICKLEN: And at that point the only
25 thing that if you say want to be proved is we took what we

1 did and gathered data and gave it right back to the plant
2 in the form of a problem report: you know, this is
3 important, we need to keep addressing this issue, we don't
4 want this issue to die. We have data here that we're not
5 going to let go by. So, we're going to give you this and,
6 you know, we gave it to the NRC inspectors at seven
7 o'clock this morning, and he got a copy before the plant
8 manager did. And we gave a copy to the plant manager.

9 MR. VORSE: So, your intent was to -- to bring
10 to the attention of your management that there was a
11 safety concern and that the curve as previously enacted by
12 Engineering was incorrect and you wanted to make sure --

13 MR. VAN SICKLEN: My intent of what?

14 MR. VORSE: Go ahead.

15 MR. VAN SICKLEN: It wasn't the intent of us
16 doing the bleed. The bleed -- my mind when we did the
17 bleed, everybody's mind was -- I was going -- if it's
18 going to act right on the curve I was done, all my
19 concerns, I was just going to jump out and say, okay,
20 you're right, I'll let it die.

21 When we did the bleed and I got data, then at
22 that point we said, well, wait a minute, I'm not going to
23 let this thing die right now. We need to write another
24 problem report and we need to bring it again to attention
25 to get it fixed, to somehow -- You know, we even brought

1 suggestions up that maybe there's a pipe in there that's
2 not being accounted for as far as ^{VOLUME} -- It keeps acting for
3 everything we show, like you have more volume of gas space
4 in the tank. And as you lower level pressure is not
5 following that curve, it stays up higher.

6 Now, those dynamics. I'm not an engineer. There
7 was things brought to my attention afterwards that during
8 that evolution you cut off some ^{RECIRC} ~~resurg~~ flow, temperature
9 goes up some in the tank, and that might have accounted.
10 I don't know. That's -- I was just trying to -- okay, we
11 still have a problem here. Give it back to Engineering
12 and let them fix it.

13 MR. VORSE: And as far as you know this is still
14 being discussed and trying to work something out as far as
15 having an accurate curve?

16 MR. VAN SICKLEN: It's still an open item right
17 now. The same curve is still in OP-103. And we have a
18 short term instruction to run at least two and a half
19 pounds below that curve.

20 MR. VORSE: During this evolution on September
21 5th did anyone say, wait a minute, we're in violation, we
22 have to stop this thing, we got a, you know, we better
23 look at this, we better look at that. Did anyone say hey,
24 we're out of our -- we're out of our --

25 MR. VAN SICKLEN: Nobody told me or I didn't

1 hear anybody say that. We addressed the AR and we
2 addressed -- we do the actions to correct it, but nobody
3 said stop right there, let's -- as soon as you get the
4 first dot to the left of the curve, the next one might be
5 to the right, we don't -- as soon as we got to the left
6 again we didn't know it was the design basis curve,
7 nobody, to answer your question, no.

8 MR. RAPP: But you do understand what the
9 purpose of the curve is for?

10 MR. VAN SICKLEN: The purpose of the curve. The
11 curve, again, there was differences. I thought the curve,
12 from reading the calculation was to prevent hydrogen from
13 going into the makeup pumps with some -- there's some
14 safety factor put up on that. That's why we didn't think
15 it was a design basis. There's stuff in there that they
16 added columns of water in on the makeup tank, okay. You
17 get this pressure and then you add so many feet safety
18 margin and that's where that curve came up with. So
19 there's safety margins built into that curve is what we
20 were assuming. That's why we didn't think that was the
21 actual design basis curve.

22 And as far as ARs, well --

23 MR. VORSE: You wanted to say something about
24 ARs?

25 MR. VAN SICKLEN: No. We'd looked at the ARs

1 and the AR's what made it applicable. And we'd already,
2 before we did any bleed we all looked at the AR and we
3 discussed it, hey, we'll take actions for that AR when we
4 need.

5 MR. VORSE: Could we go off the record for just
6 a second. I want to look at some documents and make sure
7 that --

8 (Off the record.)

9 MR. VORSE: We'd like copies -- I'll go back on
10 the record. Recorder tracers. Okay.

11 How about the letter that you wrote the note on.
12 We have the September 2nd --

13 MR. RAPP: We do have that letter, the September
14 2nd letter?

15 MR. VORSE: I believe we do, but we better ask
16 for another copy just in case.

17 September 2nd letter you talked about where you
18 wrote something on the top.

19 MR. VAN SICKLEN: I didn't have -- I didn't
20 write what's on the top.

21 MR. VORSE: Well, someone did. You know, check
22 with Halnon --

23 MR. VAN SICKLEN: The one that gave it to me --
24 and again, it appears --

25 MR. VORSE: Do you recognize this --

1 MR. RAPP: I don't think we have this one.

2 MR. VORSE: I don't either. We're going to ask
3 you for ask copy of that, please.

4 MR. RAPP: Yeah, we just need a copy of that one
5 as well.

6 MR. VORSE: Okay. What else can you think of
7 that -- do you have?

8 The ES valve? Do you know what that stands for?

9 MR. VAN SICKLEN: ES stands for engineering
10 safeguards.

11 The valve number, I think, you talking about
12 makeup valve 64? What we call MUV-64. It stands for
13 makeup valve.

14 MR. VORSE: I want to see the document --

15 MR. RAPP: There was one point in there in which
16 you discussed the response to SP-630 from Engineering was
17 that -- or from some event, was that the recorder was
18 inaccurate and you had a memorandum to that effect.

19 MR. VAN SICKLEN: A speed letter to Garret Hebb,
20 which was the shift supervisor on duty at the time that I
21 called the man up on the phone and I asked him to send me
22 a letter. And he sent one to me and the shift supervisor.

23 MR. RAPP: All I'm asking for in that particular
24 case is to get a copy of that letter as well, that memo as
25 well.

1 MR. VORSE: Okay. If you'll give me those
2 documents I asked for copies of and I'll go ahead and get
3 it on here that we're taking these documents -- or going
4 to get copies of --

5 MR. VAN SICKLEN: I need copies of these
6 back --

7 MR. VORSE: Yeah, we will promise we will not
8 take your originals. We will just ask for some copies.

9 MR. VORSE: All right, we're back on the record.
10 We took about a five minute document gathering session.

11 MR. VAN SICKLEN: Was that last five minutes off
12 the record?

13 MR. VORSE: No, I was just going to say on the
14 record what documents we did collect.

15 So, we did get interoffice correspondence dated
16 September 2nd, '94, and the subject is makeup tank
17 hydrogen over pressure. And it's to Mr. ^{BA}W.J. Hickie. And
18 it's M, N as in November, P, at the top T as in tango, S
19 as in sierra, 94-0429. And it deals with hydrogen over
20 pressure in the makeup tank. Okay.

21 And then we also have here recorder tracers on
22 the operating that we talked about in the earlier
23 testimony.

24 MR. VAN SICKLEN: And that was that recorder
25 chart right there, is from SP-630.

1 MR. VORSE: SP-630.

2 MR. VAN SICKLEN: That was done May 10th, 1994.

3 MR. VORSE: And it's stamped on there May 10th,
4 1994.

5 And lastly we have a Florida Power Corporation
6 speed letter from -- or to Garret Hebb, H-E-B-B, and Mark
7 van Sicklen from Mr. Pat Hinman. And the date is August
8 8th, 1994.

9 We're going to collect all -- copies of all three
10 of these documents from Mr. van Sicklen this morning.

11 Okay. Do you have anything you want to ask Mr.
12 van Sicklen, Curt?

13 MR. RAPP: No.

14 MR. VORSE: Okay. Once again, we understand
15 that no one in your shift was aware that this was a design
16 basis curve and no one ever brought, hey, this is a design
17 basis, we got to stop now. That was never mentioned.

18 You've talked quite a bit, Mr. van Sicklen. Is
19 there anything else you want to add to what you've already
20 discussed?

21 MR. VAN SICKLEN: Can I take a break and come
22 back in?

23 MR. VORSE: Sure. Okay. We'll go ahead and
24 take a -- postpone the interview while Mr. van Sicklen
25 talks with his -- with whoever he wants to talk to and

1 we'll get back later.

2 (Whereupon, a short recess was taken at 11:00
3 o'clock a.m., after which the proceedings resumed at 11:13
4 o'clock a.m. as follows:)

5 MR. VORSE: We're going back on the record.

6 Mr. van Sicklen spoke briefly with someone about
7 some of his concerns and I would like for Mr. van Sicklen
8 to tell us from his heart what, you know, what he feels
9 was the real story behind the evolution on September 5th.
10 Would you go ahead and just tell us what you think.

11 MR. VAN SICKLEN: Like I said, what you're here
12 for might just be the September 5th event. If not, if
13 that's all that you're interested in, then what I'm saying
14 probably ain't going to help. All I'm saying is, me
15 personally, I'm trying to be very open and honest and just
16 give you all the facts.

17 What was gained out of what that evolution that
18 we did, and again, our minds and our -- what we as the on
19 shift operators were thinking right then, we didn't -- I
20 mean, nobody even said the word test, nobody thought about
21 it at that frame point. It was only weeks afterwards that
22 -- it's almost like twisting what we did in hindsight. I
23 see your point and Management's point, that that wouldn't
24 be done again. I can see where they're coming from, and
25 they're right.

1 We should have kept going through the system and
2 kept trying to bring this out. The data that was gained
3 that night was gained and given back to basically help
4 everybody. Help the plant, help the company and help us
5 operate more safely.

6 MR. VORSE: Did you consider bringing the curve
7 to the attention of Management, a health and safety issue?
8 Did you think there was a health and safety issue involved
9 in showing us that curve was wrong?

10 MR. VAN SICKLEN: It was in my mind that it was
11 a nuclear safety issue. And I talked to the NRC about
12 that on several occasions. There's four that I can
13 remember off my head and none of them are documented. Two
14 of them I know where I was on the control board and he
15 just came up and I just pulled him aside and said I just
16 need to talk to you about this. I've done a lot that I
17 could do, I'm not getting the feedback and I'd like to
18 bring it to your attention.

19 MR. VORSE: Is that Todd Cooper?

20 MR. VAN SICKLEN: Todd Cooper.

21 And he put it on his what he called his little
22 "hit list" or his reminder program, that he would get some
23 information out. And he'd look into it personally.

24 And that's basically, you know, coming here and
25 talking to you today. I've waived the right of counsel

1 and I'm just being open and honest right now telling you
2 what brought us up to that event and everything that has
3 happened up to that.

4 And, you know, right now the data is there and
5 the company will take that data and will come up with a
6 better curve. That's what I'm expecting out of this.
7 That problem report should show that, you know, that curve
8 is not accurate and now we're going to come up with a
9 curve that's accurate. And I think the company will do
10 that.

11 MR. VORSE: Curt, is there anything else you
12 want to ask?

13 MR. RAPP: No, huh-uh.

14 MR. VORSE: Well, I certainly appreciate your
15 candor, Mr. van Sicklen. I know that this is not an easy
16 thing to do, to talk to people from the NRC, and we
17 appreciate your efforts today.

18 Is there anything you want to add besides what
19 you just said?

20 MR. VAN SICKLEN: Not at this time. I'll wait
21 and hear back how you interpret what I told you and I'll
22 wait and hear your response. And if there's more that I
23 need to talk to you, more documents I need to show you
24 I'll bring it to you at that point.

25 MR. VORSE: Okay. Well, we'll go ahead and

1 conclude the interview then. It's 11:15 a.m. Thank you
2 very much.

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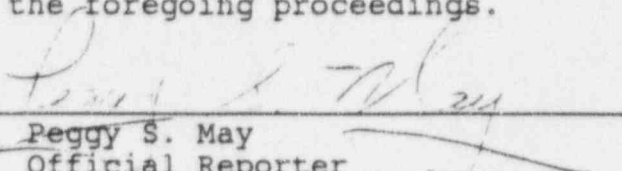
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Name of Proceeding: Interview of Mark van
Sicklen

Docket Number(s): (not assigned)

Place of Proceeding: Crystal River, Florida

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Peggy S. May
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