Title: VOGTLE ELECTRIC GENERATING PLANT:

ALLEGED INTENTIONAL VIOLATION OF A TECHNICAL SPECIFICATION
BY A VOGTLE OPERATIONS MANAGER

Licensee:

Georgia Power Company
P.O. Box 1295
Birmingham, Alabama 35201

Docket Nos.: 50-424/50-425

Case Number: 2-90-001

Report Date: March 19, 1991

Control Office: OI:RII

Status: CLOSED

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SYNOPSIS

On January 19, 1990, the Regional Administrator, U.S. Nuclear Regulatory Commission (NRC), Region II, requested that an investigation be initiated into the facts and circumstances of an alleged intentional violation of Technical Specification (TS) 3.4.1.4.2 by Georgia Power Company (GPC) Operations management, at the Vogtle Electric Generating Plant (VEGP), in October 1988. It was alleged that, contrary to this TS, the Unit 1 reactor makeup water storage tank (RMWST) valves were deliberately opened while the unit was in a Mode 5, loops not filled (Mode 5b) condition. It was also alleged that this TS violation was not reported to the NRC, either at the time of its occurrence or in November 1989 when the VEGP Plant Review Board (PRB) formally made a reportability decision regarding the circumstances of the opening of these RMWST valves. It was also alleged that VEGP management condones a "cavalier" approach to regulatory requirements on the part of VEGP Operations.

The evidence obtained in the Office of Investigations (OI) investigation substantiated the allegation that TS 3.4.1.4.2 was knowingly and intentionally violated, in October 1988, by VEGP Operations shift supervisors, with the express knowledge and concurrence of the VEGP Operations manager.

The evidence substantiated a VEGP violation of 10 CFR 50.73, in that the 1988 opening of the RMWST valves in Mode 5b, an operation prohibited by the VEGP TSs, was not ever reported to the NRC. However, there was insufficient evidence of a deliberate violation of this reporting requirement.

The investigation also surfaced the fact that the same valve openings that violated TS 3.4.1.4.2 also violated VEGP Procedure 12006-C.

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ACCOUNTABILITY

The following portions of this Report of Investigation (Case No. 2-90-001) will not be included in the material placed in the Public Document Room. This consists of pages 3 through 44.

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APPLICABLE REGULATIONS

Allegation No. 1: Alleged Intentional Violation of Technical Specification 3.4.1.4.2 by Vogtle Operations Management

Vogtle Technical Specification 3.4.1.4.2 (1988 Edition)

3.4.1.4.2 Two residual heat removal (RHR) trains shall be OPERABLE and at least one RHR train shall be in operation. Reactor Makeup Water Storage Tank (RMWST) discharge valves (1208-U4-175, 1208-U4-176, 1208-U4-177, and 1208-U4-183) shall be closed and secured in position.

APPLICABILITY: MODE 5 with reactor coolant loops not filled.

ACTION:

a. With less than the above required RHR trains OPERABLE, ...

b. With no RHR train in operation,.....

c. With the Reactor Makeup Water Storage Tank (RMWST) discharge valves (1208-U4-175, 1208-U4-176, 1208-U4-177, and 1208-U4-183) not closed and secured in position, immediately close and secure in position the RMWST discharge valves.

10 CFR 50.36: Technical Specifications (1988 Edition)

(b) Each license authorizing operation of a...utilization facility...will include technical specifications.

The Atomic Energy Act of 1954, as Amended

Section 101, License Required (42 U.S.C. 2131)
It shall be unlawful...for any person within the United States to... use...any utilization facility except under and in accordance with a license issued by the Commission.

Section 222, Violations of Specific Sections (42 U.S.C. 2272)
Whoever willfully violates...any provision of section 101...shall be punished by a fine of not more than $10,000 or by imprisonment for not more than ten years, or both...

Allegation No. 2: Alleged Intentional Non-Reporting of a Technical Specification Violation by VEGP PRB

10 CFR 50.73: Licensee Event Report System (1988 and 1989 Editions)

(a) Reportable events.

(1) The holder of an operating license for a nuclear power plant (licensee) shall submit a Licensee Event Report (LER) for any event of the type described in this paragraph within 30 days after the discovery of the event. Unless otherwise specified in this section, the licensee shall report an event regardless

of the plant mode or power level, and regardless of the significance of the structure, system, or component that initiated the event.

(2) The licensee shall report:

(i)(B) Any operation or condition prohibited by the plant's Technical Specifications...

Violat[illegible] During Conduct of Investigation: Intentional Violation of VEGP[illegible] 12006-C

V[illegible]e N[illegible] [illegible]ations Procedure No. 12006-C, UNIT COOLDOWN TO COLD Sh[illegible] tober 12-13, 1988)

2.14 If it is intended to drain the RCS to less than 25% cold calibrate pressurizer level, then prior to reaching 25% ISOLATE potential dilution flow paths by performing the following:

a. CLOSE, LOCK and TAG the following valves:

(1) UNIT 1: CVCS ISOLATION RMW TO BA BLEND, 1-1208-U4-175

UNIT 2: CVCS.....

(2) UNIT 1: CVCS ISOLATION RMW TO CVCS, 1-1208-U4-177

UNIT 2: CVCS.....

b. ENSURE CLOSED, LOCKED and TAGGED the following valves:

(1) UNIT 1: CVCS OUTLET CHEM MIXING TK, 1-1208-U4-181

UNIT 2: CVCS.....

(2) UNIT 1: CVCS SUPPLY RMW TO CHEM MIXING TK, 1-1208-U4-176

UNIT 2: CVCS.....

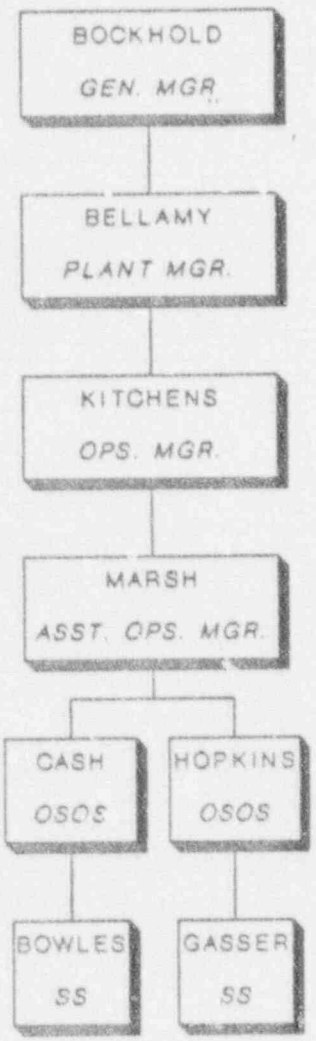
(3) UNIT 1: CVCS FLUSH RMW TO TRN A EMERG BORATION, 1-1208-U4-183

UNIT 2: CVCS.....

(4) UNIT 1: RMWST TO BTRS ISO, 1-1208-U4-226

UNIT 2: RMWST.....

VOGTLE ORGANIZATIONAL STRUCTURE
OCTOBER 11-13, 1988



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LIST OF ACRONYMS

ABO	Auxiliary Building Operator
AETA	American Engineering and Technical Assoicates
APEO	Assistant Plant Equipment Operator
BOP	Balance of Plant
CST	Central Standard Time
CVCS	Chemical and Volume Control System
ESD	Engineering Support Department
EST	Eastern Standard Time
FSAR	Final Safety Evaluation Report
GPC	Georgia Power Company
1R1	First Refueling Outage
LCO	Limiting Conditions for Operation
LER	License Event Report
NEAL	Nuclear Engineering and Licensing
NPS	Nuclear Procedures Supervisor
NRR	Nuclear Reactor Regulation
NSAC	Nuclear Safety and Compliance
NSSS	Nuclear Steam Supply System
OD	Operations Department
OSOS	Operations Superintendent on Shift
PEO	Plant Engineering Operator
PRB	Plant Review Board
RCS	Reactor Coolant System
RHR	Residual Heat Removal
RI	Resident Inspector
RMW	Reactor Makeup Water
RMWST	Reactor Makeup Water Storage Tank
RO	Reactor Operator
RWO	Radiological Waste Operator
SAER	Safety Audit Engineering Review
SE	Senior Engineer
SQA	Site Quality Assurance
SRI	Senior Resident Inspector
SRO	Senior Reactor Operator
SS	Shift Supervisor
TS	Technical Specification
VEGP	Vogtle Electric Generating Plant

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LIST OF INTERVIEWEES

	EXHIBIT
ACREE, John W., VEGP-1, SS, RO, GPC	40
ALLEN, Bob P., Plant Chemist, VEGP, GPC	32
AUFDENKAMPE, John G., Manager, Technical Support, and Member of PRB, VEGP, GPC	51
BAILEY, James A., Manager, Licensing, GPC, Birmingham, AL	69
BARLOW, Ricky T., Scheduling Coordinator, Outage and Planning Department, VEGP, GPC	34
BEASLEY, James B., Manager, Outage and Planning, VEGP, GPC	49
BELLAMY, R. Mike, Executive Vice President, AETA (former VEGP Plant Manager)	27
BOCKHOLD, George, Jr., General Manager, VEGP, GPC	26
BOWLES, John E., SS/SRO, VEGP, GPC	18
BRACK, Wesley R., APEO, VEGP, GPC	21
BURMEISTER, William L., Unit Superintendent, OD, VEGP, GPC	35
BURWINKEL, Paul, Engineering Supervisor, VEGP, GPC	47
CAIN, Daniel C., Student, Georgia Institute of Technology, former PEO, VEGP, GPC	23
CASH, Jimmy P., OSOS/SRO, VEGP, GPC	17
CHRISTIANSEN, Clayton L., SS/SRO, VEGP, GPC	67
DESROSIERS, Arthur, former Superintendent, Technical Support, Chemistry/Health Physics, VEGP, GPC	30
EAVES, Edward, ABO, VEGP, GPC	22
FREDERICK, Georgie R., SAER, formerly Manager, SQA, VEGP, GPC	68
GASSER, Jeffrey T., OSOS/SRO, VEGP, GPC	19
HAND, Robert C., Chemistry Supervisor, VEGP, GPC	31
HANDFINGER, Harvey M., Manager, Maintenance, and Member, PRB, VEGP, GPC	62

	EXHIBIT
HENNESSEY, William J., former SS/SRO, VEGP-1, GPC, currently Training Instructor, Point Beach Electric Plant, Wisconsin	44
HOPKINS, John D., OSOS/SRO, VEGP, GPC	24
KITCHENS, William F., Assistant General Manager for Operations, and Chairman, PRB, VEGP, GPC	16
LACKEY, Michael B., Acting Manager, Outage and Planning, and Member, PRB, VEGP, GPC	46
LeGRAND, Ronald L., Manager, Chemistry/Health Physics and Member, PRB, VEGP, GPC	63
MANSFIELD, Richard L., Jr., Supervisor, NSSS, ESD, VEGP, GPC	65
MARSH, Walter C., Plant Director, Palo Verde Nuclear Generating Station, formerly Asstistant Operations Manager, VEGP, GPC	25
McCOY, Charles K., Vice President, Nuclear, Vogtle Project, GPC, Birmingham, AL	61
McDONALD, R. Patrick, Executive Vice President, Nuclear, GPC	66
MEYER, Charles F., Unit Superintendent, Support, OD, VEGP, GPC	33
MIDDLEBROOKS, Kenneth D., SS, VEGP, GPC	41
MITCHELL, William R., Jr., Assistant Plant Operator, VEGP, GPC	38
MOSBAUGH, Allen L., Acting Assistant General Manager, Plant Support, VEGP, GPC	56
PARKER, William K., RWO, VEGP, GPC	36
RICKMAN, Alan G., Senior Engineer, NSAC Group, VEGP, GPC	55
ROGGE, John F., Jr., SRI, VEGP, NRC	29
RUSHTON, Paul D., Manager, NEAL, GPC Birmingham, AL	60
SALTER, Charlton D., RO, VEGP, GPC	39
STRINGFELLOW, Norman J., Jr., Project Engineer, Licensing Group, GPC, Birmingham, AL	59
SWARTZWELDER, James E., Manager, Operations, VEGP, GPC	28
THOMPSON, Thad N., Methods and Training Specialist, VEGP, GPC	42

	EXHIBIT
TUCKER, Perry, BOP, VEGP, GPC	43
TUPPER, Richard F., Senior Nuclear Chemist, South Texas Project, formerly Contract Chemist, VEGP, GPC	48
TYNAN, Carolyn C., NPS, VEGP, GPC	64
WEBB, Gregory D., RWO, VEGP, GPC	37
WILLIAMS, James D., OSOS/SRO, VEGP, GPC	45

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DETAILS OF INVESTIGATION

Purpose of Investigation

This investigation was initiated to determine: (1) whether Georgia Power Company's (GPC) Vogtle Electric Generating Plant (VEGP) Technical Specification (TS) 3.4.1.4.2 was deliberately violated by VEGP personnel during the first refueling outage of Unit 1 (1R1) in October 1988; (2) whether the VEGP Plant Review Board (PRB) intentionally failed to report this alleged TS violation when they formally reviewed the issue in September-November 1989; and (3) whether the evidence obtained during the investigation of (1) and (2) above substantiated the existence of a "cavalier attitude" on the part of GPC and/or VEGP management toward strict compliance with TS.

Background

On January 19, 1990, the Regional Administrator (RA), U.S. Nuclear Regulatory Commission (NRC), Region II (RII), requested this investigation (Exhibit 1) after the NRC resident inspector at VEGP had received an anonymous letter (Exhibit 2) which set forth the allegations cited in the Purpose of Investigation.

At the time of VEGP's 1R1, VEGP's Final Safety Analysis Report (FSAR), Chapter 15.4.6.2.1.1, entitled Dilution During Cold Shutdown, Hot Standby, and Hot Shutdown (Exhibit 3), required that valves 175, 176, 177, and 183 be locked closed during refueling in order to prevent a boron dilution accident. At this time, boron dilution flow analyses did not exist for Mode 5b (Cold Shutdown, Loops not Filled) or Mode 6 (Refueling), and, since these analyses had not been done for VEGP, the aforementioned valves were required to be locked closed in Modes 5b and 6.

VEGP TS 3.4.1.4.2 (Exhibit 4), and VEGP Procedure 12006-C, Section D4.2.14 (Exhibit 5), were instituted as required by the FSAR, to prevent inadvertent boron dilution during Mode 5, loops not filled. These TS and Procedure sections required valves 175, 176, 177, and 183 to be locked closed. The locking closed of these valves prevents the flow of unborated water from the reactor makeup water storage tank (RMWST) into the Reactor Coolant System (RCS).

In the case of operator discovery of an ongoing boron dilution, caused by one, or more, of these valves being inadvertently open, TS 3.4.1.4.2 contains an Action statement which requires that the open valve(s) be immediately closed and secured in position. The VEGP Safety Evaluation Report (SER), Section 15.4.6, entitled Inadvertent Boron Dilution (Exhibit 6), describes allowable operator action times to mitigate an inadvertent boron dilution.

On November 21, 1989, VEGP submitted, and on February 20, 1990, the NRC approved, a requested amendment to TS 3.4.1.4.2 which permitted VEGP to open RMWST valves 176 and 177, in Mode 5b, under administrative control, provided the RCS was in compliance with the Shutdown M_ _in requirements, and the high flux at shutdown alarm was operable (Exhibit 7). Prior to the February 20, 1990, NRC approval of this TS change, there was no NRC approval of the opening

of these valves in Mode 5b under administrative control. The TS required the valves to be closed and locked in Mode 5b.

Interview of Alleger

The allegations in this case came to the NRC in an anonymous letter (Exhibit 2). Therefore an interview of the alleger was not conducted.

Coordination with NRC Staff

On January 19, 1990, the Office of Investigations (OI:RII) received package of documents pertinent to the allegation letter from Ronald F. AIELLO and Robert D. STARKEY, NRC Resident Inspectors at VEGP. On the same date, OI:RII discussed case background and regulatory cites with Ken BROCKMAN, Chief, Projects Section 3B, Reactor Projects Branch No. 3, Division of Reactor Projects, RII, NRC.

On February 1, 1990, after initial interviews of seven VEGP reactor operators (ROs), OI:RII briefed the RA:RII and pertinent staff members of the results of the initial interviews. These interview results included significant portions of the licensee's explanation of the alleged TS violation. On this date, by letter to the RA (Exhibit 8), OI requested staff technical assistance with respect to the validity of the licensee's explanations, and an interpretation of whether or not, in view of these explanations, a violation of the TS existed. A RII technical assistant was assigned to the investigative team at that point.

By letter to Ben B. Hayes, Director, OI, Headquarters, dated July 10, 1990, William T. RUSSELL, Associate Director for Inspection and Technical Assessment, Nuclear Reactor Regulation (NRR), NRC, stated that, at the time of the VEGP 1R1, the intentional opening of valves 1208-U4-176 or 1208-U4-177 when in Mode 5 with reactor coolant loops not filled was a violation of TS 3.4.1.4.2 (Exhibit 9).

Allegation No. 1: Alleged Intentional Violation of Technical Specification 3.4.1.4.2 by Vogtle Operations Management

Summary

The following individuals were interviewed by OI:RII, on the dates indicated, regarding the allegation that TS 3.4.1.4.2 was intentionally violated by the Operations Manager and/or any other GPC personnel at VEGP. The pertinent testimony provided by these individuals is documented in the "Evidence" section that pertains to Allegation No. 1.

Name	Position	Date of Interview
John R. ACREE	VEGP RO	February 8, 1990
Bob P. ALLEN	VEGP Plant Chemist	June 14, 1990
Ricky T. BARLOW	VEGP Scheduling Coordinator	June 27, 1990
James B. BEASLEY	VEGP Manager, Outage and Planning	March 13, 1990

R. Mike BELLAMY	former VEGP Plant Manager	June 28, 1990
George BOCKHOLD	VEGP GM	March 14, 1990
John BOWLES	VEGP SS/SRO	March 13, 1990
Wesley BRACK	VEGP APEO	March 13, 1990
William L. BURMEISTER	VEGP Operations Unit Supt.	June 27, 1990
Paul BURWINKEL	VEGP Engineering Supervisor	February 28, 1990
Daniel C. CAIN	former VEGP PEO	February 27, 1990
Jimmy P. CASH	VEGP OSOS/SRO	February 7, 1990
Arthur E. DESROSIERS	Former VEGP Chemistry Supt.	May 14, 1990
Edward EAVES	VEGP ABO	February 8, 1990
Jeffrey T. GASSER	VEGP OSOS/SRO	February 8, 1990
Robert C. HAND	VEGP Chemistry Supervisor	May 31, 1990
William J. HENNESSY	former VEGP Operations Shift Supervisor	February 26, 1990
John D. HOPKINS	VEGP Operations Supervisor/SRO	January 30, 1990
William F. KITCHENS	VEGP Asst. General Manager, Operations	March 14, 1990
Michael B. LACKEY	VEGP Acting Manager, Outage and Planning	February 8, 1990
Walter C. MARSH	former VEGP Asst. Operations Mgr.	February 15, 1990
Charles F. MEYER	VEGP Operations Superintendent	June 14, 1990
Kenneth D. MIDDLEBROOKS	VEGP Operations SS	February 8, 1990
William R. MITCHELL, Jr.	VEGP Asst. Plant Operator	January 30, 1990
Allen L. MOSBAUGH	VEGP Acting Asst. General Manager, Plant Support	February 8, 1990
William K. PARKER	VEGP RWO	January 30, 1990
John F. ROGGE	NRC VEGP RI	March 19, 1990
Charlton D. SALTER	VEGP RO	February 7, 1990
James E. SWARTZWELDER	VEGP Manager of Operations	March 14, 1990
Thad N. THOMPSON	VEGP Methods and Training Spec.	January 30, 1990
Perry TUCKER	VEGP Balance of Plant Operator	January 30, 1990
Richard F. TUPPER	former VEGP Chemistry Contractor	June 11, 1990
Gregory D. WEBB	VEGP RWO	January 30, 1990
James D. WILLIAMS	VEGP OSOS/SRO	February 8, 1990

Evidence

1. VEGP TS 3.4.1.4.2 stated, in October 1988, that in, "MODE 5 with reactor coolant loops not filled." "...Reactor Makeup Water Storage Tank (RMWST)

discharge valves (1208-U4-175, 1208-U4-176, 1208-U4-177, and 1208-U4-183) shall be closed and secured in position." Action statement "c" of this TS, stated that if these valves are "not closed and secured in position, immediately close and secure in position the RMWST discharge valves" (Exhibit 4).

2. The Office of NRR, NRC, stated that, with regard to the 1988 version of TS 3.4.1.4.2, the intentional opening of valves 1208-U4-176 or 1208-U4-177 when in Mode 5 with the reactor coolant loops not filled is a violation of that TS (Exhibit 9).

3. The Piping and Instrumentation Diagram of the aforementioned RMWST valves shows that the closing of valves 176 and 177 prevents the flow of unborated water from the RMWST, through the chemical mixing tank, to the RCS (Exhibit 10).

4. VEGP Unit 1 Control Log shows that Unit 1 was in a Mode 5, "loops not filled" condition from at least 1906, CST, October 11, 1988, until at least 2400 (midnight) CST, October 13, 1988 (Exhibit 11).

   INVESTIGATOR'S NOTE: All times noted in the VEGP Control Room and Shift Supervisor Logs are expressed in a 24-hour day format, and in CST, so, unless otherwise noted, all times will be likewise expressed in this report.

5. VEGP Procedure No. 12006-C, entitled Unit Cooldown To Cold Shutdown (Exhibit 5), stated in Section D4.2.14 in October 1988, "If it is intended to drain the RCS to less than 25% cold calibrate pressurizer level, then prior to reaching 25% Isolate potential dilution flow paths by performing the following:

   a. CLOSE, LOCK and TAG the following valves:
      1-1208-U4-175, 1-1208-U4-177

   b. ENSURE CLOSED, LOCKED and TAGGED the following valves:
      1-1208-U4-181, 1-1208-U4-176, 1-1208-U4-183..."

6. VEGP Procedure No. 13007-1, entitled VCT Gas Control And RCS Chemical Addition stated, in October 1988, under Section D4.7, entitled Reactor Coolant System Chemical Addition, "Open Chemical Mixing Tank Supply from RMWST 1-1208-U4-176, approximately one-eighth turn to slowly fill the tank." In Section 4.7.5, this procedure stated, "Fully Open Chemical Mixing Tank Supply From RMWST 1-1208-U4-176." In Section 4.7.9, this procedure stated, "Allow flow through the Chemical Mixing Tank for ten minutes..." (Exhibit 12).

7. VEGP Procedure No. 49006-C, entitled Health Physics And Chemistry Department Outage Activities Implementing Procedure stated, in October 1988, in Section 6.4.4 entitled "Reactor Coolant System Cleanup with Hydrogen Peroxide (H_2O_2)," under Section 6.4.4 c. "Cooldown/ Draindown" that "The plant should have been placed on RHR, cooled down to 110 F, and drained down to mid-loop via the purification (CVCS) mixed bed demineralizers prior to the H_2O_2 addition." and then, "When the draindown is complete, Hydrogen Peroxide should be added" (Exhibit 13).

INVESTIGATOR'S NOTE: This procedure did not address how the hydrogen peroxide was to be added to the RCS. The testimony and logs show that it was added through the chemical mixing tank, or Chem Add Pot, by the use of valves 1-1208-U4-176, 177, and 181, as specified in Procedure 13007-1.

8. A Clearance Sheet for Clearance No. 1-88-371 shows that the 1208 system valves, the CVCS Blender Makeup Valves (which include valves 176 and 177), were tagged closed and locked in order to Isolate RMW [Reactor Makeup Water] to RCS per UOP 12006. This clearance was installed as prompted by Section D4.2.14 of VEGP Procedure 12006-C, referenced previously in paragraph 5. This Clearance Sheet shows that the clearance on these valves was installed at 0955, October 11, 1988, and was removed at 0900, November 15, 1988 (Exhibit 14).

9. VEGP Unit 1 Shift Supervisor Log shows that RMWST discharge valves 1-1208-U4-176 and 1-1208-U4-177, along with valve 1-1208-U4-181, were opened to inject hydrogen peroxide into the RCS at 0400 and 0705, October 12, 1988, and at 1030 and 1640, October 13, 1988. This log also shows that, after each of the last three above-described openings, these valves were closed and locked exactly 4 minutes after they were opened. With respect to the first opening of the valves (0400, October 12, 1988), the valves were described as being "immediately shut upon completion of fill in accordance with TS 3.4.1.4.2" (Exhibit 15).

10. KITCHENS, CASH, BOWLES and GASSER all testified that they were aware that the addition of hydrogen peroxide to the RCS, for the purpose of chemical cleaning, was a planned evolution, scheduled to occur at mid-loop during the refueling outage. (NOTE: Mid-loop is a "loops not filled" condition) (Exhibit 16, pp. 6-8, Exhibit 17, pp. 11, 16, and 26-28, Exhibit 18, 33-34, and Exhibit 19, pp. 18-19).

11. KITCHENS, CASH, BOWLES, and GASSER all testified that, prior to the first opening of the RMWST valves, they knew that a clearance had been placed on these valves, which meant that they had been documented as having been closed, locked, and tagged per procedure; and that in order to open those valves to add the hydrogen peroxide, a functional test procedure had to be used (Exhibit 16, pp. 54-56, Exhibit 17, pp. 8-9, Exhibit 18, pp. 20-23, and Exhibit 19, pp. 8-10).

12. CASH testified that, to his knowledge, a clearance is installed on the valves as an administrative action to ensure compliance with TSs. He stated that the valves were tagged shut in order to comply with TS 3.4.1.4.2 (Exhibit 17, pp. 49-50).

13. Four Functional Test Forms, associated with Clearance No. 1-88-371, show that test alignments on valves 176, 177, and 181 were performed at 0310 and 0705, October 12, 1988, and at 1030 and 1638, October 13, 1988. These same forms show that the clearance alignments were restored at 0415 and 0722, October 12, 1988, and at 1034 and 1653, October 13, 1988, respectively (Exhibit 20).

14. BRACK, EAVES, and CAIN verified their signatures on three of the Functional Test Forms, and stated that they opened, and then closed valves 176, 177, and 181 sometime between the times indicated under the

headings "Test Alignment Performed" and "Clearance Alignment Restored" on the forms (Exhibit 21, pp. 6-10, Exhibit 22, pp. 7-12, and Exhibit 23).

15. BRACK and CAIN stated that KITCHENS was not physically present at the location of these RMWST valves while they manipulated them as shown on the Functional Test Forms. They stated that they had never seen KITCHENS manipulate any of these RMWST valves (Exhibit 21, pp. 13-14, and Exhibit 23).

16. BOWLES testified that he was not sure whether the plant was in a "loops not filled" condition at 4:00 a.m., CST, October 12, 1988, when "...we loaded the chemical pot, but we did not shoot the chemicals..." (Exhibit 18, pp. 8-10).

17. BOWLES testified that, after his shift turnover discussion with his relief, GASSER, he (BOWLES) thought that TS 3.4.1.4.2 did apply to his 4:00 a.m. loading of the chemical pot. BOWLES testified that he not only wanted to "...document that I did open the valve to fill up the pot..." but also that he wanted his log entries to be consistent with GASSER's upcoming entries pertaining to the hydrogen peroxide injections. He stated, therefore, that as a result of this discussion with GASSER, he made a late 0400 entry to the Shift Supervisor Log which further described the original 0400 entry by specifically identifying the valves that were opened (Exhibit 18, pp. 14-16).

18. VEGP Unit 1 Shift Supervisor Log shows a late 0400 entry by BOWLES, actually written into the log sometime between 0507 and 0533, which states, "Valves 1-1208-U4-177, 1-1208-U4-176, and 1-1208-U4-181 opened to fill CVCS drain pot. Above mentioned valves immediately shut upon completion of fill in accordance with TS 3.4.1.4.2." This log also shows the original 0400 entry as stating, "CVCS chemical mixing pot loaded with hydrogen peroxide. Functional clearance 1-88-371 to allow sending chemicals" (Exhibit 15).

19. BOWLES testified that, at the time he made the late entry, he did not really mean to say that he was entering the action statement of TS 3.4.1.4.2 by referring to the immediate closing of the valves, but rather that he just made that late entry to document that he had opened the valves, and to be consistent with the entries that GASSER was going to be making (Exhibit 18, pp. 15-16).

20. CASH testified that he was aware that adding chemicals at mid-loop would constitute entry into the action statement of TS 3.4.1.4.2 (Exhibit 17, p. 14).

21. CASH testified that he was aware of the opening of valves 176 and 177, while he was on shift as OSOS on October 12, 1988, in order to fill the chem add pot (Exhibit 17, p. 36).

22. GASSER testified that he came on day shift and saw that the previous shift had already injected hydrogen peroxide once on their shift. He testified that almost immediately after he came on shift, he got a call from Chemistry wanting to add more hydrogen peroxide. He testified that he realized that in order to make this addition he would have to open up

the RMWST valves which were presently locked closed as part of the LCO [Limiting Condition for Operation] since the loops were not filled. He testified that he thought it would be alright to enter the action statement of TS 3.4.1.4.2 for a short period of time to add the hydrogen peroxide, but he knew it was a tech spec issue, with a high degree of sensitivity, so he asked his OSOS, HOPKINS, about this issue (Exhibit 19, p. 6).

23. HOPKINS testified that he and GASSER came to the Control Room around 5:30 a.m. to 6:00 a.m., EST, noted that the valves had been opened by the previous shift, and realized that this was a "gray area" that needed to be resolved (Exhibit 24, p. 28).

24. KITCHENS testified that he was present in the VEGP Unit 1 Control Room on October 12, 1988, at about 3:53 a.m., EST, as VEGP was draining down the RCS for the refueling outage (Exhibit 16, pp. 9-10).

INVESTIGATOR'S NOTE: KITCHENS testimony was based upon his review of his initials as the 0453 entry in the Shift Supervisor Log. In actuality, 0453 CST would be 5:53 a.m., EST, not 3:53 as testified by KITCHENS.

25. KITCHENS testified that his oncoming OSOS, HOPKINS, came to him with a question that had been raised by HOPKINS' shift supervisor, GASSER, regarding the propriety of having to enter an "immediate operator action statement" in the TS in order to open and close the RMWST valves needed to accomplish the scheduled chemical cleaning of the RCS (Exhibit 16, p. 11).

26. KITCHENS testified that these valves had already been opened by the previous shift, and that HOPKINS was asking for his (KITCHENS) concurrence on opening these valves to add chemicals, and then closing them within the boundaries of the "immediate action statement" in the TS (Exhibit 16, pp. 11-12).

27. KITCHENS testified that he knew there was a TS restriction against opening those RMWST valves, but he wanted to see if there were any other restrictions (Exhibit 16, p. 16).

28. KITCHENS testified that he told the attendees of the daily 7:00 a.m., EST, outage meeting that morning that he had put a hold on the chemical addition because one of his shift supervisors had asked for a review of the applicable TS "to make sure that we were not getting into a compliance issue" (Exhibit 16, p. 13).

29. HOPKINS and KITCHENS testified that MARSH, had been a part of their discussion regarding the definition of the term, immediate as it was used in the TS action statement, and that MARSH had said that in his experience it meant that action had to be initiated within 15 minutes (Exhibit 24, p. 8, and Exhibit 16, pp. 18-19).

30. MARSH testified that he did not specifically recall a discussion with HOPKINS and KITCHENS, during VEGP's 1R1, regarding either voluntary entry into an immediate action statement, or the definition of the term immediate as used in the action statement (Exhibit 25, pp. 8-9).

31. MARSH testified that his position was then, and is now, that you do not enter immediate action statements voluntarily except in some pretty extraordinary circumstances, and that he could not think of a case in which it could be done. He testified that in consideration of entering an immediate action statement in order to do a crud burst by injecting hydrogen peroxide, only two actions, in his opinion, were appropriate: (1) not to inject at all, and (2) to raise the water level in the RCS if you were no longer in a reduced inventory situation (Exhibit 25, pp. 6-7).

32. KITCHENS testified that, after his consideration of the applicable TS, Chapter 9 of the FSAR, input from MARSH, and his potential boron dilution calculation, he (KITCHENS) concurred with HOPKINS' decision to limit the valve openings to 5 minutes, under administrative controls, as being in compliance with the TS (Exhibit 16, pp. 15-20).

33. KITCHENS testified that, at the time of the valve openings on October 12-13, 1988, he did not get any additional concurrence on this decision to open the RMWST valves from either his immediate supervisor, the VEGP Plant Manager, or the VEGP General Manager (Exhibit 16, p. 28).

34. BOCKHOLD did not recall, and BELLAMY denied, being either consulted or asked for concurrence by KITCHENS, at the actual time of the scheduled RCS cleaning, regarding the permissibility of opening of the RMWST valves at mid-loop to inject the hydrogen peroxide for the cleaning. BELLAMY said that he had no knowledge or recollection of any reluctance, or objections by the Control Room operators with respect to opening the RMWST valves at mid-loop to do the crud burst (Exhibit 26, pp. 7-8 and Exhibit 27).

35. GASSER, HOPKINS, and KITCHENS testified that HOPKINS discussed the issue of entry into the action statement of TS 3.4.1.4.2 with KITCHENS and it was decided that it was permissible to open the RMWST valves for a maximum of 5 minutes and still be in compliance with the TS action statement (Exhibit 19, p. 7, Exhibit 24, pp. 6-9, and Exhibit 16, pp. 11-19).

36. "HOPKINS testified that, since MARSH and KITCHENS had said 15 minutes was okay," he told GASSER that opening the valves for a maximum of 5 minutes to inject the hydrogen peroxide would be a conservative length of time, and that he, HOPKINS, made the decision to go ahead and do the injections with the 5-minute limit on the valve openings. He testified that they did the chemical additions for the crud burst a couple times that day and also on the next day, October 13, 1988 (Exhibit 24, pp. 8-9).

37. HOPKINS testified that later in the morning of October 12, after he had his discussions with KITCHENS and MARSH, made his decision to open the valves to do the injections, and, in fact, had already executed the first valve opening on his shift, he phoned SWARTZWELDER, Manager, NSAC, to get his (SWARTZWELDER's) opinion on the decision to open the valves. HOPKINS testified that SWARTZWELDER concurred with the decision, and said that, "we have a defensible position" (Exhibit 24, pp. 9-11).

38. SWARTZWELDER testified that he did not recall this discussion with HOPKINS, but that if HOPKINS said he called him (SWARTZWELDER), he (HOPKINS) probably did, because it was a common practice for USOSs to call NSAC for input on TS and procedure questions (Exhibit 28, pp. 7-8).

39. ROGGE, testified that, neither in the planning phase, nor at the time of the actual conduct of the hydrogen peroxide injections was he ever consulted by VEGP personnel regarding the permissibility of opening the RMWST valves in a Mode 5, loops not filled condition (Exhibit 29, pp. 8-9).

40. KITCHENS, HOPKINS, CASH, and GASSER all denied violating TS 3.4.1.4.2 during the four openings of these RMWST valves on October 12-13, 1988, stating that since they adequately executed the immediate action statement, by only leaving the valves open for a maximum of 5 minutes, they were in compliance with the TS (Exhibit 16, p. 88, Exhibit 24, p. 15, Exhibit 17, p. 34, and Exhibit 19, pp. 16-17).

41. BOWLES denied violating TS 3.4.1.4.2 by stating that at the time he ordered the opening of RMWST valves 176 and 177, he was not sure whether the loops were filled or not; also by stating that when he made his late 0400 entry in the Shift Supervisor Log that referred to closing the valves immediately in accordance with TS 3.4.1.4.2, he was only making this entry to document his earlier opening of the valves and to make his log entry consistent with GASSER's future entries (Exhibit 18, pp. 8-10 and 14-16).

42. BOWLES admitted that, as a result of his late 0400 entry, made to maintain consistency with GASSER's future entries, he (BOWLES) probably made an error regarding the opening and closing of valve 181. He stated that he did not actually inject the hydrogen peroxide into the RCS on his shift, but only loaded the chem pot. He stated that if valve 181 had been opened, the chemicals would have been injected into the RCS, and he did not inject (Exhibit 18, pp. 19, 36, and 42).

43. DESROSIERS stated that during the planning stage for VEGP Unit 1 1R1, part of his planning responsibilities included the chemical cleaning of the RCS, and that HAND and TUPPER were working for him in that area. DESROSIERS said that his research convinced him that the chemical cleaning of the RCS would be best accomplished at half-loop, rather than at loops full and that he made a presentation of his half-loop preference to BOCKHOLD approximately 6 months prior to the actual start of the outage. DESROSIERS stated that at this presentation, based upon data gathered by TUPPER, who was also present at this presentation, he (DESROSIERS) showed BOCKHOLD that an additional 100 plus hours of critical path time would be needed if the chemical cleaning were to be done at loops full. DESROSIERS stated that he did not recall if he had discussed any type of conflict between TSs and the addition of hydrogen peroxide to the RCS at half-loop with anyone from VEGP Operations or Plant management. He advised that, in a phone conversation with HAND approximately a week prior to being interviewed by OI, HAND told him that he (HAND) was aware of the conflict between TSs and the use of RMWST water to inject the chemicals at half-loop. DESROSIERS stated that HAND told him that both he (DESROSIERS) and HAND had discussed this conflict

with TSs with VEGP Operations people in the planning stage of the outage. He stated that HAND told him that either HAND or ALLEN, who had represented HAND at many of the outage and planning meetings prior to the outage, had pointed out the RMWST valve/TS conflict to the Operations representative at these meetings (Exhibit 30).

44. HAND stated that at the time DESROSIERS made his presentation to BOCKHOLD about doing the RCS cleaning at half-loop, ALLEN was attending the outage and planning meetings as the Chemistry representative. HAND said that ALLEN told him that MEYER was the Operations representative at these meetings. HAND stated that the Chemistry Section had looked at possible methods of adding the hydrogen peroxide to the RCS, and the only way to do it was through the RCS Chem Add Pot. HAND stated that this meant that the chem add valves, also called the RMWST valves, had to be opened at half-loop to inject the hydrogen peroxide. HAND said that ALLEN told him that he (ALLEN) had brought up this fact with MEYER at the outage and planning meetings, soon after DESROSIERS' presentation to BOCKHOLD, "because the plant tech specs required those chem add valves to be locked closed in Modes 5 and 6." HAND stated that ALLEN told him that Operations had shrugged this valve opening problem off by saying that they (Operations) would handle it by putting these chem add valves into an LCO, declaring them inoperable, opening them long enough to inject the chemicals, and then closing them, and then closing out the LCO. HAND advised that since Operations had told ALLEN they would handle the problem, Chemistry did not have to go into the anticipated panic mode of either requesting TS relief from the NRC, or doing the necessary safety analysis regarding the portion of the boron dilution scenario that had not been done in the original FSAR (Exhibit 31).

45. ALLEN stated that he was not aware of any conflict between TSs and adding the hydrogen peroxide through the chemical mixing tank. He stated that he did not recall MEYER being at the outage and planning meetings, and that there were various Operations supervisors or superintendents at these meetings, but BURMEISTER was the Operations representative that he specifically recalled being at these meetings. ALLEN said that he never had a discussion with HAND, or anyone from Operations about how Operations was going to handle any kind of a TS conflict connected with the chemical addition at mid-loop (Exhibit 32, pp. 7-9).

46. MEYER stated that he was not directly involved in the outage and planning meetings, and could not recall attending any of the meetings. He stated that his involvement in outage planning pertained to personnel matters such as staying within the union contract with regard to the manning levels needed in the outage shift structure, and scheduling people to support the outage work. He said that he was an administrative Operations superintendent, and as such he supervised the Operations Procedures Section. MEYER testified that he was not aware of any conflict between any plant TS and conducting a chemical cleaning of the RCS at mid-loop. He said that he did not recall having any discussions with ALLEN about chemical additions to the RCS during the outage. He advised that he recalled that BARLOW was the Operations representative at the outage and planning meetings (Exhibit 33, pp. 6-10).

47. BARLOW testified that he worked for BURMEISTER as the refueling coordinator for Operations during the planning stage for the outage. He said that he attended the outage and planning meetings. He testified that he was aware that, months before the actual start of the outage, the decision had been made to clean the RCS with hydrogen peroxide while at mid-loop. He stated that, during the planning phase, he did not become aware of a conflict between any plant TS and the valves that were to be opened to add the hydrogen peroxide to the RCS. BARLOW testified that it was his assignment to check TSs and procedures for conflicts in the planned outage evolutions, but that he did not become aware of a TS conflict with the RCS chemical cleaning because he did not know that the dilution valves were going to have to be opened to do this cleaning (Exhibit 34, pp. 4-13).

48. BURMEISTER testified that he was the main Operations contact for coordinating the refueling outage activities. He said that either he or BARLOW represented Operations at most of the outage and planning meetings. BURMEISTER stated that he was aware, during this planning phase, that it was decided to chemically clean the RCS at mid-loop during the outage. He said that at no time during the planning phase for the outage did he become aware of a conflict between a TS and the method of conducting this chemical cleaning. BURMEISTER stated that the Chemistry people had mentioned that they were going to use their normal path for injecting chemicals, and that he did not, "draw the connection to the implications of the tech specs" when Chemistry told him that. BURMEISTER stated that the Chemistry Superintendent would have had the responsibility of identifying a potential conflict between a Chemistry procedure and an Operations procedure. He stated that BARLOW never mentioned any conflict to him, either (Exhibit 35, pp. 5-9, 11-12, and 17).

49. PARKER and WEBB both stated that they were on duty as radwaste operators, processing demin water in the Auxiliary Building at the times of the chemical injections, and had no knowledge of, or involvement in, the circumstances, activities, or conversations pertaining to these injections (Exhibits 36 and 37).

50. MITCHELL stated that he was a plant equipment operator, not in the Control Room at the time of the chemical injections, and had no knowledge of, or involvement in, the circumstances, activities, or conversations pertaining to these injections (Exhibit 38).

51. SALTER stated that he was the BOP operator on shift with CASH and BOWLES on the morning of October 12, 1988. He advised that he recalled some controversy between his shift supervision, CASH and BOWLES, regarding TS compliance in connection with a request from Chemistry to add chemicals to the RCS. He stated that the compliance question was taken out of the Control Room by CASH, probably to Operations management, and the resolution that came back was that it was permissible to open the valves that were required to be opened to add the chemicals as long as the valves were only opened for a short time, like 5 minutes or less, and the opening had to be closely observed and controlled. SALTER stated that the addition of these chemicals was scheduled, and had been discussed prior to the actual call from Chemistry to do it, so when it came time to

do it, the question of TS compliance was raised and resolved within a short amount of time. SALTER stated that he recalled the RO on shift with him, ACREE, having a discussion with either CASH or BOWLES about how the valve opening was going to have to be controlled (Exhibit 39, pp. 6-13).

52. ACREE stated that he was the RO on shift with CASH, BOWLES, and SALTER on October 12, 1988, but that his attentions were concentrated on all the temporary instrumentation that was monitoring the RCS level during draindown. He stated that he was not involved with the chemical addition at all. He stated that he had no conversations with CASH about the RMWST valves. He said that he recalled no controversy about a TS compliance issue regarding the chemical injection (Exhibit 40, pp. 7-11).

53. MIDDLEBROOKS stated that he was on shift with HOPKINS and GASSER on October 13, 1988, in the Clearance and Tag Office as the support shift supervisor. He stated that he did not recall the addition of hydrogen peroxide to the RCS on this shift, and he did not recall processing any clearances on the RMWST valves. MIDDLEBROOKS stated that he did issue a Functional Test Form on those valves because GASSER had asked for it. He stated that he made no independent judgement of his own regarding the safety of opening those valves at that time as a functional test (Exhibit 41, pp. 4-8).

54. THOMPSON and TUCKER, RO and BOP, respectively, on shift with HOPKINS and GASSER on October 12-13, 1988, both stated that they did not recall doing the hydrogen peroxide additions. They did not recall any controversy or discussions in the Control Room about a TS compliance issue pertaining to the opening of the RMWST valves to add chemicals at that time (Exhibit 42, pp. 6-14 and Exhibit 43, pp. 5-10).

55. THOMPSON stated he did not recall an Operations management decision to open the RMWST valves to add chemicals at that time (Exhibit 42, p. 8).

56. HENNESSY, Shift Supervisor, night shift, October 12, 1988, stated that he did not recall doing any chemical additions to the RCS on any of his shifts during 1R1. He stated that he did not recall any controversy or discussion about a TS compliance issue involving the opening of the RMWST valves at mid-loop (Exhibit 44).

57. WILLIAMS, OSOS, night shift, October 12, 1988, stated that he did not recall any controversy or discussion about a potential TS compliance problem associated with the chemical addition at mid-loop in 1R1. He stated that he did not do any chemical additions to the RCS on his shift at this time. He advised that he had no problem entering an immediate action statement of a TS as long as there was Operations management concurrence (Exhibit 45, pp. 5-9).

58. LACKEY stated that, during 1R1, he was the work control superintendent, and was not directly involved with Chemistry in either the planning or the conduct of the chemical cleaning of the RCS. He stated that voluntary entry into an immediate action statement was not a TS violation as long as the action statement was executed within 5 minutes (Exhibit 46, pp. 8 and 24-25).

59. BURWINKEL, stated that he had no direct knowledge of the circumstances of the chemical cleaning of the RCS during 1R1 (Exhibit 47).

60. TUPPER, stated that he attended the Outage and Planning meetings as the Chemistry representative until the decision was made by BOCKHOLD to do the RCS cleaning at mid-loop. TUPPER stated that, at that point, ALLEN attended the meetings as Chemistry representative (Exhibit 48).

61. BEASLEY, stated that in the planning meetings that he attended prior to 1R1 there was no discussion of a conflict between any Operations procedures or TSs and the planned chemical cleaning of the RCS at mid-loop (Exhibit 49, p. 11).

Conclusions

Based on the evidence developed during this investigation, it is concluded that HOPKINS, GASSER, CASH, and BOWLES knowingly and intentionally placed the plant in a condition prohibited by TS 3.4.1.4.2, by opening valves 1208-U4-176 and 1208-U4-177 while in Mode 5, loops not filled. This TS violation was done with the full knowledge, concurrence, and permission of KITCHENS.

Based upon the evidence developed during this investigation, it is also concluded that HOPKINS, GASSER, CASH, and BOWLES also knowingly and intentionally violated VEGP Procedure No. 12006-C, Section D4.2.14, with the full knowledge, concurrence, and permission of KITCHENS.

Allegation No. 2: Alleged Intentional Non-Reporting of a Technical Specification Violation By VEGP PRB

Summary

In addition to BOCKHOLD, KITCHENS, LACKEY, MOSBAUGH, and SWARTZWELDER, the following individuals were interviewed by OI:RII, on the dates indicated, regarding the allegation that, in November 1989, the VEGP PRB intentionally failed to report the October 1988 TS violation of opening the RMWST valves in Mode 5b, when the PRB formally made a reportability decision on the circumstances of that valve opening. The pertinent testimony of these individuals is provided in the Evidence section of this report that pertains to Allegation No. 2.

Name	Position	Date of Interview
John G. AUFDENKAMPE	VEGP Mgr., Technical Support	February 9, 1990
James A. BAILEY	GPC Manager, Licensing	March 8, 1990
Clayton L. CHRISTIANSEN	VEGP SS, Operations	January 30, 1990
Georgie R. FREDERICK	VEGP Supervisor, SAER	February 8, 1990
Harvey M. HANDFINGER	VEGP Manager of Maintenance	February 8, 1990
Ronald L. LeGRAND	VEGP Manager, Health-Physics and Chemistry	February 8, 1990

Richard L. MANSFIELD, Jr.	VEGP Supervisor, ESD	February 9, 1990
Charles K. McCOY	GPC Vice President, Nuclear, Vogtle Project	March 8, 1990
R. Patrick McDONALD	GPC Executive Vice President, Nuclear Operations	July 23, 1990
Alan G. RICKMAN	VEGP Senior Engineer, Nuclear Safety and Compliance Group	March 13, 1990
Paul D. RUSHTON	GPC Manager, NSAC	March 8, 1990
Norman J. STRINGFELLOW, Jr.	GPC Project Engineer, Licensing Group	March 8, 1990
Carolyn C. TYNAN	VEGP Supervisor, NPS	March 13, 1990

Review of Documentation

On February 8, 1990, a review was conducted of the minutes of the PRB meetings during the period September 14, 1989, through November 17, 1989, that pertained to PRB deliberations of reportability of the October 1988 opening of the RMWST valves in Mode 5b (Exhibit 50). This period included minutes of four meetings, conducted on September 14, 1989, September 19, 1989, October 13, 1989, and November 17, 1989. The minutes of the September 14, 1989, meeting, designated as Meeting No. PRB 89-124, showed that "the board discussed the issue of adding hydrogen peroxide in the RCS via the chemical addition tank valves prior to refueling. An REA has been written to allow manipulation of these valves Initial cost estimates for the analysis is $50,000. The board also discussed the operation of these valves during the last refueling outage and whether or not this action may be reportable. Further review and discussion of this topic was deferred until the following PRB meeting when W. F. Kitchens could be in attendance" (Exhibit 50, p. 2). The same page of the September 14, 1989, meeting minutes showed that BOCKHOLD was present at the meeting and agreed that an overall consistency was needed for what constitutes reportability of 'outside the design basis' (Exhibit 50, p. 2). These minutes showed that a request would be made for a written Corporate interpretation on that issue.

Review of the minutes of the September 19, 1989, PRB meeting, designated as PRB 89-125, showed that, "W. F. Kitchens briefed the board on the specifics of the issue from last meeting on Chemical Addition Tank Valves. Hydrogen peroxide was added to the RCS during last refueling outage knowing that an LCO would be entered. W. F. Kitchens initiated a DC on this and stated his opinion is that this is not reportable. SONOPCO is looking into whether or not there is a stated position on purposely entering immediate operator actions. During Unit 1 refueling, there was a different interpretation of mid-loop. Chairman requested that when SONOPCO (Corporate) provides an interpretation and evaluation of DC, it should be returned to the board" (Exhibit 50, p. 7).

Review of the minutes of the November 17, 1989, PRB meeting, designated as PRB 89-146, showed that, "The board discussed the reportability determination for DC No. 1-89-1397 for addition of hydrogen peroxide to the RCS for chemical decontamination. The board's position is that this deficiency is not report-

able. A comment was made that the Westinghouse analysis be included with the DC documentation as justification for the change" (Exhibit 50, p. 19).

Evidence

1. AUFDENKAMPE stated that sometime in August 1989, RICKMAN was processing a proposed TS change to allow the opening of the RMWST valves in Mode 5, loops not filled, in order to facilitate the chemical cleaning of the RCS by injecting hydrogen peroxide at mid-loop. He advised that RICKMAN had requested a Westinghouse safety analysis in support of this TS change request that was going to cost $50,000. AUFDENKAMPE stated that he questioned RICKMAN on: (1) why it was necessary to spend the $50,000, and (2) what VEGP had done when they accomplished this same chemical cleaning during the 1R1 in 1988. He advised that RICKMAN told him that he was not sure, but that he thought that they had just opened the valves and injected the hydrogen peroxide, and that the TS change request was being processed so that there would be no confusion next time about whether or not opening those valves was permissible. AUFDENKAMPE said that he brought this issue to the attention of MOSBAUGH, and then it was discussed, to some extent, at the 9:00 a.m. status meeting that day. He advised that, after a couple other meetings with KITCHENS, and perhaps BOCKHOLD, KITCHENS wrote the Deficient Card (DC) on the issue. AUFDENKAMPE stated that, as the manager of technical support, he felt the responsibility to have a determination made regarding the reportability of the opening of these RMWST valves at mid-loop during the 1R1 of Unit 1. He stated that this issue was brought before the VEGP PRB and discussed regarding whether this was a TS violation and thus reportable to the NRC under 10 CFR 50.73. He advised that the discussion boiled down to whether or not an immediate action statement could voluntarily be entered. He said that a GPC Corporate position paper was requested regarding the voluntary entry into immediate action statements. He stated that he thought either KITCHENS or BOCKHOLD telephoned McCOY to get the Corporate position on that issue. He said that the Corporate position statement was issued and stated that you should not voluntarily enter immediate action statements, but also stated that, "we can't find anything that says you can't" (Exhibit 51, pp. 6-15).

   INVESTIGATOR'S NOTE: The Corporate position statement (Exhibit 53) does state that voluntary entry into an LCO that has an immediate action statement should not be made. This position statement does not say anything about not being able to, find anything that says you can't.

2. AUFDENKAMPE stated that he wished that the Corporate position on that issue had been stronger, but that since the statement did not cite any specific prohibitions against such a voluntary entry, he decided that there was no TS violation, and, therefore, was not reportable under that criteria. He advised that the PRB also looked at the reportability issue from the aspect of the plant being in an unanalyzed condition that significantly compromised plant safety. He stated that the Westinghouse analysis that was done convinced him that the opening of those RMWST valves for the length of time they had been opened to inject the hydrogen peroxide did not significantly compromise plant safety, and the event was not reportable to NRC under that criteria either (Exhibit 51, pp. 15-16).

3. AUFDENKAMPE stated that he felt that the, "PRB review and evaluation of the incident was appropriate, correct, and in conformance with all the regulatory requirements" (Exhibit 51, pp. 19-20).

4. AUFDENKAMPE was asked if he was aware of any statements or indications, from any of the people that made the decision to open these valves, that they thought they were doing something wrong at the time. He replied that either on the day that he brought up the issue in the 9:00 a.m. meeting or the next day, KITCHENS came to his office and asked him, "John, what are you trying to do, get me put in jail?" AUFDENKAMPE stated that he felt that KITCHENS had some real concerns, and was somewhat serious, but that KITCHENS' presentation of that statement was also somewhat jovial in nature (Exhibit 51, pp. 23-26).

5. AUFDENKAMPE also stated that, in the early stages of the OI investigation of this issue, HOPKINS told him that originally he (HOPKINS) did not feel that opening the valves was right, but that now he did (Exhibit 51, p. 22).

6. On September 14, September 19, October 13, and November 17, 1989, the VEGP PRB deliberated the reportability, under the criteria of 10 CFR 50.73, of the October 1988 opening of the RMWST valves in Mode 5b (Exhibit 50, Exhibit 51, p. 8, Exhibit 55, p. 15, and Exhibit 56, pp. 11-12).

7. DC No. 1-89-1397 states the reported deficiency as, "This is to record the review of addition of hydrogen peroxide to the reactor coolant for chemical decontamination during the 1R1. Tech Spec 3.4.1.4.2 action statement c was entered during this time." This DC also states that a Tech Spec compliance issue to be evaluated. The Event time shown on this DC was 0400 hrs. 10/12/88. The deficiency was shown as being reported by KITCHENS to CHRISTIANSEN at 0946 9/18/89. Attached to this DC was Significant Occurrence Report (SOR) No. 1-89-1397/158, dated September 21, 1989, stating that, "PRB to aid with Tech Spec interpretation. See PRB mtg minutes 89-125" (Exhibit 52).

8. The specific reportability criteria stated as being considered by the PRB with respect to this issue were: (1) any operation or condition prohibited by the plant's TSs, and (2) the plant being in an unanalyzed condition that significantly compromised plant safety (Exhibit 51, p. 15, Exhibit 56, pp. 27-28, and Exhibit 28, pp. 21-23).

9. The items that were considered by the entire PRB in their meetings with respect to making their reportability decision were: TS 3.4.1.4.2, DC No. 1-89-1397, SOR No. 1-89-1397/158, KITCHENS' verbal explanation of the event, a memorandum from KITCHENS to BOCKHOLD dated September 15, 1989 (Exhibit 57), a typewritten chronology entitled Unit 1 Shift Supervisor Log Summary (Exhibit 58), a GPC position paper entitled Voluntary Entry Into Limiting Conditions For Operation Requiring Immediate Action (Exhibit 53), and a Westinghouse boron dilution analysis for Modes 5b and 6 (Exhibit 54).

   INVESTIGATOR'S NOTE: The focus of the PRB deliberations on reportability criteria (1) above narrowed to whether or not it was a violation of TSs

to voluntarily enter an immediate action statement. The PRB focus on reportability criteria (2) above narrowed to the result of the Westinghouse boron dilution analysis.

10. The GPC Corporate position paper, entitled Voluntary Entry Into Limiting Conditions For Operation Requiring Immediate Action, transmitted by cover letter from McCOY to BOCKHOLD, dated October 2, 1989, states, "Whenever a window has been provided for a system or component to be taken out of service (whether the window is in the form of an AOT or a specific exception) it is clear that voluntary entry into an LCO is acceptable. However, because of the potential for placing the plant into an unanalyzed condition, voluntary entry into an LCO which expressly prohibits a given condition and requires immediate corrective action should that condition exist, should not be made" (Exhibit 53).

    INVESTIGATOR'S NOTE: Although GPC Corporate officials at the SONOPCO offices in Birmingham, AL, denied that they prepared this Corporate position paper for a specific reportability decision by the VEGP PRB, this document was a major factor in the PRB decision not to report the deliberate opening of the RMWST valves in Mode 5b. Even though this position paper states that, "...voluntary entry into an LCO which expressly prohibits a given action [the TS prohibits the opening of the valves by stating that they shall be closed and secured in position] and requires immediate corrective action...should not be made," the PRB decided that the valve opening was not reportable because the position paper did not definitively state that such a voluntary entry shall not, or will not be made. By the use of that logic, it appears that when the Corporate position paper did not say, as was expected, that it was perfectly permissible to voluntarily enter an immediate action statement, and, in fact, said that it should not be done, the PRB had to resort to the should not versus shall not rationale in order to justify to themselves the non-reporting of this valve opening.

11. The Westinghouse Boron dilution analysis, entitled Westinghouse Nuclear Safety Evaluation Check List, transmitted to GPC from Westinghouse on November 13, 1989, states that, "...for a dilution flow rate of 3.5 gpm [gallons per minute] or less there is sufficient operator action time available to terminate the flow after the high flux at shutdown alarm" (Exhibit 54, p. 7).

    INVESTIGATOR'S NOTE: Although the Westinghouse analysis concluded that the addition of a non-borated chemical mixture through CVCS valves 176 and 177 would not result in a loss of shutdown margin if the operator action acceptance criteria was met after the high flux at shutdown alarm, the VEGP Operations personnel that made the decision to open these valves in October 1988 did not have the benefit of this formal analysis at that time. Therefore, the opening of the RMWST valves of VEGP, Unit 1, in Mode 5b, in October 1988 did, in fact, place the plant in a condition unanalyzed in the existing FSAR. However, reasonable estimates, by VEGP Operations personnel, of the extent of dilution that would be caused by the hydrogen peroxide injections at the time, plus the safety feature of the high flux at shutdown alarm, indicated no significant compromise to plant safety.

12. RICKMAN verified that the issue of a possible TS compliance problem regarding the opening of the RMWST valves to inject chemicals at mid-loop during the 1R1 came up when he brought his request for the $50,000 Westinghouse boron dilution analysis to AUFDENKAMPE. He stated that he was not present, but that he understood that the reportability issue was brought up at a 9:00 a.m. manager's meeting soon after he had talked with AUFDENKAMPE about it. He advised that he attended a PRB meeting on September 14, 1989, and was explaining the Licensing Document Change Request (LDCR) and the need for the Westinghouse analysis when the compliance issue regarding the 1988 chemical injection came up. RICKMAN said that there was no discussion on the compliance issue in that PRB meeting because the PRB deferred such discussion until KITCHENS could be in attendance at the meeting. RICKMAN stated that he did not attend any of the subsequent PRB meetings when the compliance issue was discussed, but that he understood that the PRB decided that the October 1988 opening of the RMWST valves at mid-loop was not a reportable event. He stated that, from his experience, and his review of the applicable TS in this issue, he would be of the opinion that you could not voluntarily enter that immediate action statement. He stated that, from his Licensing-oriented point of view, he tended to have a conservative philosophy on TS interpretation (Exhibit 55, pp. 11-21).

    INVESTIGATOR'S NOTE: KITCHENS' input regarding interpretation of this TS and its associated action statements, as well as his description of his direct involvement in the October 1988 chemical injection itself, is important and essential to a thorough and complete PRB reportability decision on this issue. However, an independent, objective PRB discussion of the interpretation of a TS seemingly could have taken place without KITCHENS' input at that particular time, unless the other PRB members felt incapable of making their own individual interpretations, or were prepared to ratify KITCHENS' interpretation without question. It is also notable that RICKMAN, a Senior Engineer in a licensing capacity, who was closely involved with the processing of the change to the TS that would clearly permit the opening of these valves in Modes 5b and 6, was neither asked for his input on the compliance issue at the PRB meeting that he did attend, nor was he invited back to any of the subsequent PRB meetings in which the compliance issue was discussed.

13. MOSBAUGH stated that AUFDENKAMPE brought up the reportability issue in a daily 9:00 a.m. staff meeting, in mid-September 1989, after having discussed it with MOSBAUGH prior to the meeting. He stated that the issue was placed on the PRB agenda for the next day, and he (MOSBAUGH) was the vice chairman of that PRB meeting. He stated that AUFDENKAMPE and RICKMAN discussed the issue in that meeting, and the only documents available for review at the time were in RICKMAN's Request for Engineering Analysis (REA), or LDCR package. He stated that the mere existence of the REA package indicated to him that there was an unreviewed safety question regarding the use of these valves to add hydrogen peroxide at mid-loop (Exhibit 56, pp. 12-15).

14. MOSBAUGH stated that, at first, there was a discussion in the PRB about whether or not the plant was in a loops not filled condition when the valves were opened, but that the PRB eventually decided that the loops were not filled (Exhibit 56, p. 17).

15. MOSBAUGH stated that, later in the day of that first PRB meeting on this issue, he met with BOCKHOLD and told him that a DC should be initiated on the event in order to properly resolve the reportability aspect. He stated that BOCKHOLD had KITCHENS come to his office to discuss the issue, and KITCHENS said that he would prepare the DC (Exhibit 56, p. 19).

16. MOSBAUGH stated that the Corporate position paper bore upon his final determination of non-reportability from the aspect of, "a condition or operation prohibited by Technical Specifications." He stated that the reason that the position paper was requested by the PRB was so that GPC Corporate would specifically answer the issue at hand, and since it did not specifically state that entering an immediate action statement was prohibited, he (MOSBAUGH) interpreted the Company position to be that it was not prohibited. MOSBAUGH stated that the position paper had been prepared by the Corporate Licensing Group, which is tasked with making those kind of decisions. He advised that he thought that STRINGFELLOW actually prepared the paper (Exhibit 56, pp. 27-30).

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18. STRINGFELLOW stated that he did not use TS 3.4.1.4.2 as an example in his position paper because of the fact that it was supposed to be generic (Exhibit 59, p. 8).

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21. KITCHENS stated that, as chairman of the PRB, he was not a voting member unless it was to break a tie, and his vote was not needed in the PRB decision of non-reportability regarding the hydrogen peroxide addition issue. He stated that he did not think it was a reportable event, but his participation in the PRB discussions was primarily his description of the circumstances of the event itself, and that AUFDENKAMPE was the PRB member that briefed the board on the applicable reportability criteria, and on the data that applied to that criteria (Exhibit 16, pp. 84-85).

22. KITCHENS stated that the board agreed that they would wait and see what the Company position (the Corporate position paper) was going to be on reportability before they voted, because if the Company position differed from their vote, they would "have to rethink it." (Exhibit 16, p. 77).

23. The members of the PRB that actually voted on the reportability issue in the November 17, 1989, PRB meeting; MOSBAUGH, HANDFINGER, SWARTZWELDER, and AUFDENKAMPE; all stated that the PRB deliberations on the issue were open, fair, and not unduly influenced by KITCHENS. (Exhibits 56, 62, 28, and 51).

    INVESTIGATOR'S NOTE: The creation of the position paper was prompted by the VEGP PRB reportability deliberations regarding this specific potential TS violation. The VEGP PRB expected the paper to specifically address that issue. The position paper not only did not specifically address the TS in question, but did not even use it as one of its generic examples. So, when the position paper did not make a definitive reportability call, and did not specifically prohibit voluntary entry into immediate action statements (although it specifically stated that it should not be done), the PRB still made its reportability decision, using this generic, non-specific position paper as the primary basis. Therefore, instead of going back to Corporate for a definitive reportability call on the specific issue at hand, the PRB, using the inverse logic that since the paper did not say anything about the specific issue being reportable, and did not specifically prohibit voluntary entry into immediate action statements, decided that the opening of the RMWST valves at mid-loop was not a reportable event.

24. LeGRAND stated that he was not present at the PRB on the day that they made the reportability decision, in 1989, on the opening of the RMWST valves in Mode 5b in 1R1. He advised that he had been part of the PRB discussions on that issue, and his vote would have been that it was not reportable if he had been present on the day of the vote. He stated that part of his involvement with this issue with the PRB was that he had an action item to research alternate means of injecting chemicals into the RCS at mid-loop, other than through the chem add pot in the Chemical and Volume Control System (CVCS) system. He stated that, in Modes 5 and 6, the only way to do it was through the chem add pot (Exhibit 63, pp. 3-7).

25. TYNAN, PRB Secretary and Procedures Supervisor, stated that, from her observations of the PRB discussions on the DC No. 1-89-1397, the Board seemed to be split, Operations versus Support, on the preferred operational method of conducting the chemical cleaning of the RCS. TYNAN advised, however, that there did not seem to be a reportability or safety disagreement within the Board. She advised that the PRB discussion on

that issue was open and healthy, and that everyone was able to voice their opinions (Exhibit 64, pp. 10-11).

26. MANSFIELD, a voting alternate PRB Member, stated that he was an alternate for M. W. HORTON at the November 1989 PRB meeting at which the vote was taken on the reportability of the 1988 opening of the RMWST valves in Mode 5b. He stated that the Westinghouse analysis showed that there was not an unreviewed safety question. He was satisfied that there was no TS violation, based upon KITCHENS' explanation of the event and interpretation of the term immediate as used in the action statement of the applicable TS. He stated that the PRB discussion of the issue was open and unrestricted, and that he was satisfied that the event was not reportable (Exhibit 65, pp. 5 and 9-15).

27. McDONALD, Executive Vice President, Nuclear, GPC, stated that he was not aware of any of the facts and circumstances surrounding the 1988 valve opening or the 1989 PRB deliberations regarding the reportability of that issue. He stated that he was not involved in the preparation or approval of the GPC Corporate position paper regarding voluntary entry into immediate action statements. He stated that he is not aware of the general nature, or contents of GPC Corporate position papers as they are promulgated to the GPC nuclear plants. He stated that when he found out that NRC OI was investigating this issue, he purposely isolated himself from any involvement with it until he could approach the issue with NRC on a management level (Exhibit 66, pp. 4-10).

28. CHRISTIANSEN, Shift Supervisor, stated that his only involvement with this issue was that he was on duty in the Control Room when the DC was processed. He stated that since the event was a year old, it did not affect his operation of the plant when the DC came to the Control Room. He stated that he was not involved in, or aware of the circumstances surrounding the chemical addition to the RCS during 1R1. He stated that he did no investigation of his own on the DC (Exhibit 67, pp. 6-10).

29. FREDERICK, non-voting PRB member, stated that, in his mind, the issue regarding the 1988 opening of the RMWST valves in Mode 5b was not a significant issue with the PRB, and he did not recall much discussion about it in the November 17, 1989, meeting when the final vote on reportability was taken. He stated that he thought that a requested change to the TS in question had precipitated the DC that was before the Board. He stated that he did not think the issue was reportable. He stated that he felt that the PRB decision was unbiased and bona fide, but that the definition of immediate was not a subject of discussion at the meeting, and he did not leave the meeting with any feel for the definition of immediate as it applies to the action statement of the TS. He stated that the plant Operations people were not comfortable with that portion of the Tech Spec, and that is why they were trying to get it changed (Exhibit 68, pp. 4-27).

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INVESTIGATOR'S ANALYSIS: It appears that the VEGP PRB evaluation of the available information in their determination that the October 1988 opening of the VEGP Unit 1 RMWST valves in Mode 5b was not reportable to the NRC, lack both depth and logic. They considered a dilution analysis that was not in existence at the time of the event. They also considered a formal Corporate position statement that concluded "...voluntary entry into an LCO which expressly prohibits a given condition and requires immediate correction action...should not be made" and based on this determined that since the position paper did not expressly state that such an entry was not specifically prohibited, the 1988 RMWST valve opening was not reportable. At the time the PRB was deliberating this issue they were aware of the fact that the very TS that they decided was not violated was in the process of being changed to permit the very same valve openings that were in question in their reportability decision.

Conclusions

The evidence developed during the investigation substantiated that GPC violated 10 CFR 50.73 by not reporting to the NRC that in October 1988, VEGP was placed in a condition prohibited by plant TS. However, there was insufficient evidence to substantiate that GPC deliberately did not report this condition to the NRC.

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SUPPLEMENTAL INFORMATION

This investigation has developed information indicating possible violations of Federal Criminal Law. Under the circumstances, a copy of the final Report of Investigation has been referred to the Department of Justice for prosecutive consideration.

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LIST OF EXHIBITS

Exhibit No.	Description
1	RA:RII Request for Investigation, dated January 19, 1990.
2	Anonymous allegation letter, undated.
3	VEGP FSAR-15, Chapter 15.4.6.2.1.2, entitled Dilution During Cold Shutdown, Hot Standby, and Hot Shutdown.
4	VEGP TS 3.4.1.4.2 (as of October 1988).
5	VEGP Operations Procedure 12006-C, Rev. 9, dated August 19, 1988.
6	VEGP SER, Chapter 15.4.6, entitled Inadvertent Boron Dilution.
7	GPC request and NRC approval to Amendment to TS 3.4.1.4.2.
8	OI:RII Memorandum to RA:RII, dated February 1, 1990, regarding Request for Technical Assistance.
9	RUSSELL memorandum to Hayes, dated July 10, 1990, regarding interpretation of 1988 version of TS 3.4.1.4.2.
10	Piping and Instrumentation Diagram, RMWST to Chemical Mixing Tank to RCS.
11	VEGP, Unit 1 Control Log, from 0045, October 11, 1988, to 2400, October 13, 1988.
12	Pages 12 and 13 of VEGP Procedure No. 13007-1, Rev. 2, dated April 15, 1988, entitled VCT Gas Control and RCS Chemical Addition.
13	Page 15 of VEGP Procedure No. 49006-C, Rev. 0, dated June 7, 1988, entitled Health Physics and Chemistry Department Outage Activities.
14	Clearance Sheet, No. 1-88-371, regarding CVCS Blender Makeup Valves 1208.
15	VEGP Unit 1 Shift Supervisor Log, from 0003, October 11, 1988, to 2400, October 13, 1988.
16	Transcript of Interview with KITCHENS, dated March 14, 1990.
17	Transcript of Interview with CASH, dated February 7, 1990.
18	Transcript of Interview with BOWLES, dated March 13, 1990.

Exhibit No.	Description
19	Transcript of Interview with GASSER, dated February 8, 1990.
20	Functional Test Forms (4), regarding Clearance No. 1-88-371, dated October 12-13, 1988.
21	Transcript of Interview with BRACK, dated March 13, 1990.
22	Transcript of Interview with EAVES, dated February 8, 1990.
23	Report of Interview with CAIN, dated February 27, 1990.
24	Transcript of Interview with HOPKINS, dated January 30, 1990.
25	Transcript of Interview with MARSH, dated February 15, 1990.
26	Transcript of Interview with BOCKHOLD, dated March 14, 1990.
27	Report of Interview with BELLAMY, dated June 28, 1990.
28	Transcript of Interview with SWARTZWELDER, dated March 14, 1990.
29	Transcript of Interview with ROGGE, dated March 19, 1990.
30	Report of Interview with DESROSIERS, dated May 14, 1990.
31	Sworn Statement of HAND, dated May 31, 1990.
32	Transcript of Interview with ALLEN, dated June 14, 1990.
33	Transcript of Interview with MEYER, dated June 14, 1990.
34	Transcript of Interview with BARLOW, dated June 27, 1990.
35	Transcript of Interview with BURMEISTER, dated June 27, 1990.
36	Transcript of Interview with PARKER, dated January 30, 1990.
37	Transcript of Interview with WEBB, dated January 30, 1990.
38	Transcript of Interview with MITCHELL, dated January 30, 1990.
39	Transcript of Interview with SALTER, dated February 7, 1990.
40	Transcript of Interview with ACREE, dated February 8, 1990.
41	Transcript of Interview with MIDDLEBROOKS, dated February 8, 1990.

Exhibit No.	Description
42	Transcript of Interview with THOMPSON, dated January 30, 1990.
43	Transcript of Interview with TUCKER, dated January 30, 1990.
44	Report of Interview with HENNESSY, dated February 26, 1990.
45	Transcript of Interview with WILLIAMS, dated February 8, 1990.
46	Transcript of Interview with LACKEY, dated February 8, 1990.
47	Report of Interview with BURWINKEL, dated February 28, 1990.
48	Report of Interview with TUPPER, dated June 11, 1990.
49	Transcript of Interview with BEASLEY, dated March 13, 1990.
50	Minutes of Plant Review Board Meetings, dated September 14, 1989, September 19, 1989, October 13, 1989, and November 17, 1989.
51	Transcript of Interview with AUFDENKAMPE, dated February 9, 1990.
52	Deficiency Card No. 1-89-1397, dated September 18, 1989.
53	GPC Corporate position paper, dated October 2, 1989.
54	Westinghouse Nuclear Safety Evaluation, dated November 14, 1989.
55	Transcript of Interview with RICKMAN, dated March 13, 1990.
56	Transcript of Interview with MOSBAUGH, dated February 8, 1990.
57	Memorandum from KITCHENS to BOCKHOLD, dated September 15. 1989.
58	Typewritten Summary of Unit 1 Shift Supervisor Logs, undated.
59	Transcript of Interview with STRINGFELLOW, dated March 3, 1990.
60	Report of Interview with RUSHTON, dated March 8, 1990.
61	Transcript of Interview with McCOY, dated March 8, 1990.

Exhibit No.	Description
62	Transcript of Interview with HANDFINGER, dated February 8, 1990.
63	Transcript of Interview with LeGRAND, dated February 8, 1990.
64	Transcript of Interview with TYNAN, dated March 13, 1990.
65	Transcript of Interview with MANSFIELD, dated February 9, 1990.
66	Transcript of Interview with McDONALD, dated July 23, 1990.
67	Transcript of Interview with CHRISTIANSEN, dated January 30, 1990.
68	Transcript of Interview with FREDERICK, dated February 8, 1990.
69	Report of Interview with BAILEY, dated March 8, 1990.