TMI DOCUMENTS

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7909140504

NOTES FOR TMI-2
ACCIDENT REPORT

I.A. BACKGROUND

1. Significant Operating Events T. Martin
   a. General

2. Prior Trips
   a. Comparison to 3/28/78 JC & DH
   b. Staffing during prior trips RM
   c. Feedwater Operating Practices. DH

~~Prior PMOV failures~~

REPORT NOTES

BKGND

I. A. SELECTED PLANT CONDITIONS AND PRACTICES PRIOR TO ACCIDENT

2. OPERATING STAFF

KIRKPATRICK → a. General Qualifications & Training

Periods of Training
Total work experience
& Retraining
Davis Besse letter.

(1) Prior inspections in this area

(2) Our Findings

(3) Comparison to Regual. Prog. Requirements

Hunter → b. Shift Composition Compared to Tech Specs

(1) General Schedule compared to T.S.

Marshall
Assignment

See B. Martin for Shift Lists

(2) Specific Schedule for shifts preceding accident.

MARSH → c. ~~Shift Conditions~~ Physical and Emotional Condition of Operational Staff

~~(1) Party~~

~~(2) Health & Aberrant Behavior~~

~~(3) Shift Turnover (influence of improper attitude).~~

Coord

Move to Open Action

~~SABOTAGE~~

Marsh

d. Possibility of "Anniversary" Celebration Quite "

e. Possibility of Plant Sabotage

REPORT NOTES

BKGND

I. A. SELECTED PLANT CONDITIONS AND PRACTICES PRIOR TO ACCIDENT

3. PLANT STATUS

HUNTER → a. General Plant Operating Status Prior to Accident

Don Kirkpatrick → b. Equipment Out of Service

~~B. Martin → c. Technical Specification ACTION Statement Status.~~

d. RCS Leakage

~~Possibility of Plant Sabotage.~~

~~Sabotage~~

REPORT NOTES

BKGND

I. A. SELECTED PLANT CONDITIONS AND PRACTICES PRIOR TO ACCIDENT

R. MARTIN

4. Status of Surveillance & Inspection

RI IE Inspector → a. ~~General Status~~ Surveillance Program Status

→ (1) General — TS Action Statements

HUNTER → (2) Emergency Feedwater System Surveillance
Include last EFW surveillance

CRESPELL → (3) Core Physics Surveillance

HUNTER → b. Inspection Program Status

4. Status of Surveillance

a. General

b. Status of Selected ESF Components

c. Status of Surveillance Records

d. Status of Surveillance Inspection

e. Status of Core Physics Surveillance

REPORT NOTES

BKGND

I. A. SELECTED ~~PLANT~~ CONDITIONS AND PRACTICES PRIOR TO ACCIDENT

5. ~~[illegible]~~ Maintenance Practices

R. Martin → a. General

FASANO → b. Practices

FASANO → c. Component Maintenance History ~~of~~ immediately Prior To Trip.

(1) EFW PUMPS & VALVES

(2) EMOV
(address non safety related & track as possible where it came from)

(3) Other Components or electrical systems on which you have data

FASANO

d. Emergency Feedwater System concerns

→ (1) Classification : UNR

→ (2) Common Mode Failure UNR

REPORT NOTES

BKGND

I. A. SELECTED PLANT CONDITIONS AND PRACTICES PRIOR TO ACCIDENT

6. Management and Support Staff Qualifications

KIRKPATRICK → a. Plant Management

FASANO/~~KIRK~~ KIRKPATRICK → b. Non licensed Operators

KIRKPATRICK → c. Technical Support Staff

KIRKPATRICK → d. P.O.R.C

KIRKPATRICK → e. Comparison to Regulatory Requirements

REPORT NOTES

I. B. OPERATOR ACTIONS DURING ACCIDENT

DH ✓ 1. Preface
✓ 2. Operator Actions Following Loss of Main Feedwater
✓ 3. Operator Actions Following Turbine Trip
✓ 4. Operator Action Following Reactor Trip
✓ 5. Operator Actions Following ES Actuation
6. Operator Action Concerning the Operation of the Make-up System
7. Operator Actions Concerning Condensate System
8. Operator Actions Concerning Reactor Building Sump Pumps.
9. Operator Actions Concerning the "B" OTSG Tube Leak
10. Operator Actions Concerning Natural Circulation - Decay Heat Removal Via OTSG's.
11 Operator Actions Concerning the ABST pumps.
12
13
14
AF ( ). Non licensed Operator Actions
DKS ( ). Effect of Training on Operator Actions {Level stuff, Local Rising, Emerg. Plan, others}
DH ( ). Location & Duties of Key Operating Personnel
~~( ). Description of Emergency~~

REPORT NOTES

I. C. MANAGEMENT ACTIONS DURING ACCIDENT

~~Intro~~ Preface

T. MARTIN → 2. IMPLEMENTATION OF EMERGENCY PLAN (OPERATIONAL ASPECTS)
(Discuss general Emergency Director & Staff Actions)

3. PROVISION OF TECHNICAL SUPPORT

Creswell → a. Onsite Technical Staff

CRESWELL → b. NSSS VENDOR

FASANO → c. ARCHITECT ENGINEER
(Use material below to establish if A/E Contacted)

EASANO ~~FASANO~~ → d. LICENSEE CORPORATE TECHNICAL STAFF

FASANO → e. HOLDING COMPANY TECHNICAL STAFF

FASANO → f. COMPARISON TO EMERGENCY PLAN OR REGULATORY REQUIREMENTS

KIRKPATRICK 4 → 5. ~~NOTIFICATION OF~~ LICENSEE/NRC INTERFACE

a. Brief Notification Summary

b. Communications

c. Impact of Inspector's Presence on Licensee Actions.

d. Was severity of accident discussed with NRC people by ~~t~~ that day?

REPORT NOTES

I. SIGNIFICANT EVENTS DURING ACCIDENT

1. TURBINE TRIP

FASANO/ T. MARTIN → a. Cause

T. Martin → b. Sequence

include here

FASANO → c. Air System problems

Dryers full of water
Blowdown once per shift etc

REPORT NOTES

I. D. SIGNIFICANT EVENTS DURING ACCIDENT

R. Martin → 2. Closed EFW VALVES
- a. When Did NRC Know?
- b. When did L. know?

3. Adjustment of HPI
- a. Operator Actions

HUNTER → (1) Rationale

HUNTER → (2) Minimum Flows / INTERVIEWS

- b. EVALUATION

KIRKPATRICK → (1) HPI PUMP HISTORY

KIRKPATRICK → (2) EFFECTIVE FLOW RATE TO RCS

T. MARTIN → (3) PUMP OPERATING PROBLEMS
- (a) COMPUTER INDIC. PROBS.
- (b) CONTROL / INTERLOCK PROBS.

Separate Item

REPORT NOTES

I. SIGNIFICANT EVENTS DURING ACCIDENT

4. Shutdown of Reactor Coolant Pumps

~~FASANO~~ HUNTER → a. General conditions at time of shutdown

HUNTER → b. Procedural Requirements (reference any discussions already addressed elsewhere in report.)

FASANO → c. Vibrational alarm limits & bases

R. Martin → 5. ~~Repressurization Without RCP Operation~~ Attempted and Successful Restarts of RCP's (General discussion of reasons RCP's not operated — compared to pump start requirements)

REPORT NOTES

I. D. SIGNIFICANT EVENTS DURING ACCIDENT

R. Martin → 6. Use of Core Flood Tanks

KIRKPATRICK → 7. SUMP PUMP OPERATION
(Summarize times, quantity transferred & put to bed if water continued to syphon)

FASANO → 8. EMOV Failure
a. (Brief ¶ and refer to material in MAINTENANCE Section for Background & history Material.)
→ KIRKPATRICK PROVIDE TEMP. HISTORY WRITEUP

~~R. Martin → 9. Low Boron Sample Determinations Concentrations~~
~~(Discuss Operator response — Compare to Procedural Requirements)~~

Covered Elsewhere

REPORT NOTES

I. SIGNIFICANT EVENTS DURING ACCIDENT

R. Martin → 10. Emergency Director Leaves Site.
- a. Summarize Chronology
- b. Compare To Emergency Plan Requirements.

(Open) 11. Communications During Accident.

Plant Computer Records.

T. Martin → 12. ~~Alarm/Utility Typer Out of Service — Loss of Alarm Data~~

R. Martin → 13. Pressure Spike in Containment.

CRESWELL → 14. HIGH TEMPERATURE, ~~DETERMINATIONS~~ & CORE ~~BEHAVIOR~~ RESPONSE
- a. RTD Measurements
- ~~a.~~ In-core T/C measurements
- b. Incore flux detector behavior
- KIRKPATRICK d. OTSG & PRIMARY Temperature Recorder display.
- e. Evaluate Actions (or lack) in light of procedures.

REPORT NOTES

I. SIGNIFICANT EVENTS DURING ACCIDENT

R Martin 15. LOSS OF HEAT SINK — Who ordered why Impact.

a. Atmos dumps

b. Condenser Loss

c. Regaining

~~R Martin 16. Early Void Formation~~

? → 17. Difficulty in Maintaining Letdown

(18) Reactor Coolant Make-up Pump Starting Problems

~~18. [illegible]~~

~~19. [illegible]~~

19. Disabling of Diesels

~~20. EFW Flow Measurement~~ ← add to closed EFW Valves

21.

REPORT NOTES

I. D. SIGNIFICANT EVENTS DURING ACCIDENT