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50-251 Turkey Point Plant, Unit 4, Florida Power and Light C 05000251
AUTH.NAME AUTHOR AFFILIATION
WILLIAMS,J.W. Florida Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION
VARGA,S.A. Operating Reactors Branch 1

SUBJECT: Forwards response to NRC 850416 request for addl info re methods & criteria for comparing post-trip review info w/ known or expected plant behavior,per response to Generic Ltr 83-28.

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FLORIDA POWER & LIGHT COMPANY

MAY 3 , 1985

L-85-214

Office of Nuclear Reactor Regulation
Attention: Mr. Steven A. Varga, Chief
Operating Reactors Branch #1
Division of Operating Reactors
U. S. Nuclear Regulatory Commission

Dear Mr. Varga:

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Generic Letter 83-28, Item 1.1
(Post Trip Review)
TAC Numbers 52810 and 52811

Attached is our response to your April 16, 1985 request for additional information regarding the methods and criteria for comparing post trip review information with known or expected plant behavior. It addresses the concerns and recommendations in Sections III.C and III.E of your Safety Evaluation.

If you have any questions regarding this response, please call us.

Very truly yours,

J. W. Williams, Jr.
Group Vice President
Nuclear Energy

JWW/TCG/eab

A055
1/1

Turkey Point Units 3 and 4
Docket Nos. 50-250, 50-251

ENCLOSURE

SUBJECT: REQUIRED ACTIONS BASED ON GENERIC IMPLICATIONS OF SALEM ATWS EVENTS (Generic Letter 83-28, Item 1.1 - Post Trip Review)

By letter dated November 8, 1983, which was forwarded in response to the NRC Generic Letter 83-28, Florida Power and Light provided information regarding its Post-Trip Review Program and Procedures for the Turkey Point Plant Units 3 and 4. In its Draft Safety Evaluation (SE) for Item 1.1 of Generic Letter 83-28, the NRC identified a concern with the Florida Power and Light response to Item 1.1 of Generic Letter 83-28 and requested additional information.

The following information addresses the NRC's concerns and recommendations identified in Sections III.C and III.E of the Draft Safety Evaluation.

NRC SE CONCERNS AND RECOMMENDATIONS

III.C. The licensee has not addressed the methods and criteria for comparing the event information with known or expected plant behavior. We recommend that the pertinent data obtained during the post-trip review be compared to the applicable data provided in the FSAR to verify proper operation of the systems or equipment. Where possible, comparisons with previous similar events should be made.

III.E. The licensee has provided for our review a systematic safety assessment program to assess unscheduled reactor trips. We recommend that this program be revised to include methods for comparing the event information with known or expected plant behavior as described in Section III.C above.

FPL RESPONSE

Since submittal of FPL's November 8, 1983 response to Generic Letter 83-28, a number of revisions to both Administrative Procedure (AP) 0103.16, "Duties and Responsibilities of The Shift Technical Advisor (STA)", and Off-Normal Operating Procedure (ONOP) 0208.1, "Shutdown Resulting from Reactor Trip or Turbine Trip", have been made to address the methodology and criteria used to perform post-trip reviews. The improvements made to the way the post-trip reviews are handled at Turkey Point used INPO's Good Practice Procedure OP-211, "Post-Trip Reviews", as a model in developing these procedural revisions. All requirements governing the post-trip review process have been removed from the Off-Normal Operating Procedure 0208.1 and have been incorporated into Attachment 2, Appendix B, of Administrative Procedure 0103.16, dated April 24, 1985. A copy of this latest revision of Attachment 2, Appendix B, to Administrative Procedure 0103.16 has been enclosed for the NRC's information.

In the April 24, 1985 revision to Procedure AP 0103.16, the STA has been assigned the responsibility to perform a post trip review for any automatic or required manual (due to a malfunction) reactor trip or turbine trip, including subcritical reactor trips. These post trip reviews will be initiated in accordance with the methodology and criteria of Attachment 2, Appendix B, of Administrative Procedure 0103.16 and will be documented and retained as permanent plant records on completed copies of Appendix B. Utilizing the new post-trip review guidelines delineated in the latest revision of Section 6.0 of Appendix B, the STA compares the trip to similar transients, either a previous trip and/or FSAR delineated transients in order to verify the proper operation of systems and equipment. Provisions have been made in Appendix B to document the date of any previous trips and/or page number(s) of applicable FSAR transients (Appendix B, Subsection 6.d). Appendix B, Subsection 6.d, also requires the STA to describe any unexpected aspect of the transient behavior of the plant and to document the resolution of any variances which were identified during the post trip review process. A file of previous post-trip reviews is kept in the control room for the purposes of performing this comparison. A copy of the FSAR is also kept in the control room for this purpose.

The criteria used to perform a preliminary safety assessment as part of the post-trip review process are identified in Section 7.0 of Appendix B to AP 0103.16. These criteria are as follows:

a. RCS pressure remained above setpoint for automatic SIS Actuation

b. RCS pressure remained below setpoint for pressurizer code safety valve actuation

c. RCS temperature decreased less than 100° F/hr.

d. Reactor Coolant was contained within the primary RCS and the pressurizer relief tank

e. Indicated pressurizer level remained on scale

f. Indicated S/G level remained on scale

The STA's have been instructed on the above methodology and criteria for performing a post-trip review and are familiar with the requirements of the latest revision of AP 0103.16.

ATTACHMENT 2

STA REPORT OF PLANT ABNORMAL OCCURRENCES

Prepared by _____ Date _____
STA Engineer

Reviewed by _____ Date _____
STA Lead Engineer

Reviewed by _____ Date _____
Operation Support Engineer Supervisor

Reviewed by _____ Date _____
Technical Department Supervisor

I. Title: _____

_____

II Report Type: (Check One)

☐ STA Report of Plant Significant Events.
(Complete and attach Appendix A)

Copies to:
(Marked Preliminary)
Plant Manager - Nuclear
Operations Supervisor - Nuclear
Operations Superintendent - Nuclear
Maintenance Superintendent - Nuclear
Quality Assurance Superintendent
Technical Department Supervisor
Regulation and Compliance Supervisor
NRC Resident Inspector

☐ Post Trip Review:
(Complete and attach Appendix B)

Copies to:
(Marked Preliminary)
Plant Manager - Nuclear
Operations Supervisor - Nuclear
Operations Superintendent - Nuclear
Maintenance Superintendent - Nuclear
Quality Assurance Superintendent
Technical Department Supervisor
Regulation and Compliance Supervisor
NRC Resident Inspector

☐ STA Report of Plant Occurrences
(Complete and attach Appendix C)

Copies to:
(Marked Preliminary)
Regulation and Compliance Supervisor
Technical Department Supervisor

APPENDIX B
(Sheet 1 of 12)

POST TRIP REVIEW

Unit:_____ Date of Trip:_____ Time of Trip:_____

1. Initial Plant Conditions:

a. Plant Status Prior to Reactor Trip (circle one):

(1) Unit Startup Operations
(2) Steady State Operations
(3) Load Changes during Routine Power Operations
(4) Unit Shutdown Operations
(5) Other
(describe) _____

b. Reactor Power _____%

c. Reactor Coolant System Pressure _____psig

d. PORV Block Valves

MOV-*-535	(circle)	Open	Closed
MOV-*-536	(circle)	Open	Closed

e. Status of Control Stations:

(1) Loop A Feedwater Control	(circle)	Manual	Auto
(2) Loop B Feedwater Control	(circle)	Manual	Auto
(3) Loop C Feedwater Control	(circle)	Manual	Auto
(4) Steam Dump to Condenser	(circle)	Manual	Auto
(5) Pressurizer Pressure Control	(circle)	Manual	Auto

f. Off Normal Status of any Trains/Portions of Safety Systems:

(1) Reactor Protective System _____
_____
_____

(2) Safety Injection System _____
_____
_____

APPENDIX B (Cont'd)
(Sheet 2 of 12)

POST TRIP REVIEW

(3) Emergency Containment Cooling and Filtering _____

_____

_____

(4) Containment Spray _____

_____

_____

(5) Containment Isolation _____

_____

_____

(6) Auxiliary Feedwater _____

_____

_____

(7) Diesel Generators _____

_____

_____

g. Test Surveillances in Progress:

Test Number	Status/Step

APPENDIX B (Cont'd)
(Sheet 3 of 12)

POST TRIP REVIEW

2. Plant Response:

a. Trip Sequence Time Intervals (obtained from DDPS-SOE)

*NOTE: If DDPS is Out of Service (OOS) indicate status of components marked with asterisk.

1. *Logic Matrix Actuated: _____ Time 0

2. RT Relays Dropout _____ _____

3. *Reactor Trip Breakers (OPEN) A _____ B _____

NOTE: The Reactor Trip Breakers opening time is checked on a monthly basis using Operating Procedure 1004.2.

4. *RPI Rod Bottom _____

5. *Turbine Stop Right _____

Valves - (CLOSED) Left _____

6. *Generator Breakers A _____

(OPEN) B _____

Note the first-out annunciator on each panel. C _____ E _____
Attach copy(ies) of SOE and any applicable file parameter printouts (if available).

b. Safety System Actuation (N/A if not applicable)

	Actuation Time
(1) Reactor Protection System Initiating Signal _____	_____
(2) Safety Injection System	_____
(3) Emergency Containment Cooling and Filtering System	_____
(4) Containment Spray System	_____
(5) Containment Isolation	_____

c. Safety Valve Actuation:

(1) Pressurizer Code Safety Valves (circle if lifted) A B C

(2) Main Steam Code Safety Valves (circle) Yes No

APPENDIX B (Cont'd)
(Sheet 4 of 12)

POST TRIP REVIEW

d. Manual Actions:

(1) Were any control stations taken from AUTO to MANUAL mode Yes____ No____
If yes, specify station and time.

_____

_____

_____

_____

(2) Other manual actions (specify and include time):

_____

_____

_____

_____

e. Radiological Response (include abnormal ARM and PRMS indications):

_____

_____

_____

_____

f. Other Comments and Responses:

_____

_____

_____

_____

_____

_____

APPENDIX B (Cont'd)
(Sheet 5 of 12)

POST TRIP REVIEW

g. Backup Documentation: attach a copy of all applicable logbook entries, recorder charts, log sheets, etc...

Information sources to be collected.

Item to be collected	Check if copied and collected
1. Sequence of Events (from Units high speed printer)	_____
Post Trip Review files (from DDPS)*	_____

2. Appropriate log books, list as applicable (refer to Aministrative Procedure 0103.2, Responsibilities of Operators and Shift Technicians on Shift and Maintenance of Operating Logs and Records, Section 8.3 and 8.4 for listing of Control Room log books.)

_____ log book _____
_____ log book _____
_____ log book _____
_____ log book _____
_____ log book _____

3. Appropriate recorder charts, list as applicable (refer to Administrative Procedure 0103.2, Responsibilities of Operators and Shift Technicians on Shift and Maintenance of Operating Logs and Records, Section 8.3 and 8.4 for partial listing of Control Room recorder charts)

Recorder No._____ Measures_____ _____
Recorder No._____ Measures_____ _____
Recorder No._____ Measures_____ _____
Recorder No._____ Measures_____ _____
Recorder No._____ Measures_____ _____

4. Other information (list)

_____ _____
_____ _____

* The following is a list of channels that should be retrieved following a Unit trip:

PRIORITY 1: (Should include after every trip if possible)
009, 042, 046, 062, 081, 083, 085, 088, 141, 142, and 145

PRIORITY 2: (Include if time and conditions permit)
024, 033, 052, 053, 064, 076, 096, 100, 105, 143, and 144.

NOTE: If a particular channel is out of service, or provides erroneous information, substitute it with another channel reading similar information (i.e., Ch. 042 is out of service, substitute with Ch. 41 or 43).

ATTACHMENT B (Cont'd)
(Sheet 6 of 12)

POST TRIP REVIEW

3. PLANT PERSONNEL STATEMENTS

a. Operations Shift on Duty During Event (number): _____

The following personnel were directly involved with the event and may be able to supplement the information in this report if clarification is needed:

_____ _____
_____ _____
_____ _____

b. Attach statements from personnel involved with the trip concerning the events that perceded and followed the trip. Each individual should submit a statement concerning the way they remember the event.
Personnel statements attached (Circle one) YES NO

Example

Name:_____ Position:_____

If handwritten statements are prepared, include the plant conditions prior to the trip, your indications that a problem existed, your action as a result of those indications, noted equipment malfunctions or inadequacies, and any identified procedure deficiencies. Also, include any information you consider important to review this unscheduled reactor trip and actions to prevent recurrence.

(Use additional sheet if necessary)

_____ / _____
Signature Date Time

APPENDIX B (Cont'd)
(Sheet 7 of 12)

POST TRIP REVIEW

4. Sequence of Events:

Prepared by STA:_____ Date_____

Reviewed by:_____ Date_____
Plant Supervisor - Nuclear

Briefly describe the sequence of events preceding and following the reactor trip.

TIME	EVENT DESCRIPTION

APPENDIX B (Cont'd)
(Sheet 8 of 12)

POST TRIP REVIEW

5. Cause of Reactor Trip:

   a. Logic that directly resulted in reactor trip:

   b. Probable cause of the reactor trip:

6. Post Trip Evaluation:

   a. Limiting Conditions for Operation (list any deviations):

   _____

   _____

   _____

   b. Identification of Systems and Equipment with Inadequate Performance:

SYSTEM COMPONENT	DESCRIPTION OF PROBLEMS

NOTE: If appropriate, have system or equipment walkdown inspections or damage assessment conducted and documented. Attach results

APPENDIX B (Cont'd)
(Sheet 9 of 12)

POST TRIP REVIEW

c. Verify unit is stable or controlled to desired conditions, consider:

CHECK (X)	
_____	Nuclear Instrumentation
_____	RCS Fluid Inventory
_____	RCS Pressure
_____	RCS Temperature
_____	RCS Flow
_____	Containment Sump
_____	PRMS
_____	ARMS
_____	S/G Level
_____	S/G Pressure
_____	Turbine Gen. (Vib., hydrogen status, etc.)
_____	Secondary Systems

REMARKS: _____

If Safety Injection was actuated verify Emergency Operating Procedure 20000 is implemented.

d. Unexpected Aspect of Transient Behavior (if event compared with previous similar transient; note the transient with which compared)

_____

Compared With
FSAR Transient page number _____
Previous Reactor Trip on _____ / _____
Date Time

Resolution of
Difference(s) _____

e. Transient Data for Pertinent Plant Parameters

	MAXIMUM			MINIMUM		
RCS Pressure	Loop A	B	C	Loop A	B	C
RCS Temperature	Loop A	B	C	Loop A	B	C
SG Pressure	Loop A	B	C	Loop A	B	C
SG Level	Loop A	B	C	Loop A	B	C

APPENDIX B (Cont'd)
(Sheet 10 of 12)

POST TRIP REVIEW

7. Preliminary Safety Assessment (circle)

a.	RCS pressure remained above setpoint for automatic SIS Actuation	Yes	No
b.	RCS pressure remained below setpoint for pressurizer code safety valve actuation	Yes	No
c.	RCS temperature decreased less than 100° F/hr.	Yes	No
d.	Reactor Coolant was contained within the primary RCS and the pressurizer relief tank	Yes	No
e.	Indicated pressurizer level remained on scale	Yes	No
f.	Indicated S/G level remained on scale	Yes	No

COMMENTS:

_____

_____

_____

_____

APPENDIX B (Cont'd)
(Sheet 11 of 12)

POST TRIP REVIEW

7. Make appropriate notifications:

|_____| Operating Procedure 0103.12 Notification of Significant Events to NRC

|_____| Emergency Procedure 20103 Classification of Emergencies

8. a. If Maintenance Department support is required to investigate the cause of a reactor/turbine trip, the appropriate maintenance department(s) shall provide the results of their investigation:

NOTE: If maintenance support is not required, mark this step N/A.

|__| PWO(s) attached. PWO Nos._____

Fill in if additional clarifying information is available or if a PWO is not attached.

Work performed and findings:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Signed _____ Mech. Maint.
_____ Elect. Maint.
_____ I & C Maint.

Appropriate Maint. Dept. Supervisor(s) or designees). (Mark N/A for departments not involved in investigation)

b. Failure of the Maintenance Department investigation to support the most probable cause listed in item 4b above shall be discussed in item 9 below.

APPENDIX B (Cont'd)
(Sheet 12 of 12)

POST TRIP REVIEW

9. Discuss trip cause, any safety considerations, and immediate corrective actions.

   A) If cause of reactor trip is known (see Item 4), acceptably corrected and any safety considerations are resolved, and the PS-N, STA, and Operations Supervisor,and Plant Manager - Nuclear or his designee concur; authorize unit startup in accordance with OP 0202.2, Unit Startup, Hot Shutdown to Power Operation.

   B) If cause of reactor trip is not known (see Item 4) or any safety considerations are not resolved, The Plant Manager - Nuclear or his designee shall be consulted and he shall determine the need for additional investigation, technical support and PNSC review prior to authorizing unit startup. The STA's Signature on the Report of Plant Abnormal Occurrences shall be complete prior to restart.

REMARKS: - Reactor startup authorized pending resolution of the following items (List as applicable):

_____
_____
_____
_____
_____

NOTE: Attach completed copy of all applicable PS-N checklists.

Completed Date:_____ Time:_____

Signed:_____ Signed:_____
Plant Supervisor - Nuclear Shift Technical Advisor

REMARKS:

_____
_____

****

Transmit package with attachments to the Operations Supv. for further review and routing.

SIGNED:_____ DATE REVIEWED:_____
(Operations Supervisor - Nuclear)

Transmit package with attachments to the STA Lead Engineer (Tech. Dept.) for further review and routing.

Turkey Point Units 3 and 4
Docket Nos. 50-250, 50-251

ENCLOSURE

SUBJECT: REQUIRED ACTIONS BASED ON GENERIC IMPLICATIONS OF SALEM ATWS EVENTS (Generic Letter 83-28, Item 1.1 - Post Trip Review)

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