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ADMINISTRATIVE INSTRUCTION

AI-704

FLORIDA POWER CORPORATION

CRYSTAL RIVER UNIT 3

REACTOR TRIP REVIEW AND ANALYSIS

THIS PROCEDURE ADDRESSES NON-SAFETY RELATED COMPONENTS

REVIEWED BY: Plant Review Committee

Mike Collins

Date 04/24/86

Meeting No. 86-16

APPROVED BY: Nuclear Plant Manager

[signature]

Date 5/2/86

INTERPRETATION CONTACT: Nuclear Safety Supervisor

TABLE OF CONTENTS

1.0 PURPOSE

The purpose of this procedure is to establish the administrative requirements following transient events for implementation of a Post-Trip Review program.

2.0 REFERENCES

a. NRC Generic Letter 83-28, "Post-Trip Review" and FPC Responses

b. CP-111, "Documenting, Reporting, and Reviewing Non-Conforming Operations Reports"

c. CP-125, "Corrective Action Procedure"

d. Babcock & Wilcox "Transient Assessment Program (TAP) Guidelines"

3.0 RESPONSIBILITY

The Nuclear Safety Supervisor is responsible for the content of this procedure and shall act as the interpretation contact for any questions regarding its content.

4.0 IMPLEMENTATION

4.1 INTRODUCTION

4.1.1 This procedure establishes guidelines for a systematic method of conducting the technical review and analysis of plant performance associated with reactor trips in order to:

- Determine the immediate, intermediate, and root causes of the trip.
- Identify unexpected or abnormal response to the trip by plant systems, equipment, or personnel.
- Assess the impact of identified abnormalities on nuclear safety, equipment reliability, system performance, and plant availability.
- Develop corrective action recommendations to prevent the recurrence of the trip and to mitigate abnormal responses.
- Satisfy reporting requirements.
- Document observed plant response for future study and comparison.

4.1.2 The reactor trip review program consists of four distinct phases:

- Post-Trip Review
- Restart Decision
- Independent Review
- Subsequent Evaluation

All unplanned reactor trips will be subject to full review and evaluation. Planned reactor trips with no identified abnormalities need not proceed to the subsequent evaluation phase unless it is deemed necessary by the Nuclear Safety Supervisor.

4.1.3 The Nuclear Plant Manager (NPM) or Man On Call (MOC) is the team leader in assessing and justifying reactor restart in accordance with Section 4.3.1 of this procedure.

4.2 POST-TRIP REVIEW

4.2.1 Immediately following plant stabilization after a reactor trip, the Shift Operations Technical Advisor (SOTA) will complete Enclosure 1, "Post-Trip Review and Restart Justification". This data collection effort should be completed as rapidly as possible following the event but should not interfere with performance of the SOTA's duties if subsequent events occur or further complications develop.

4.2.1.1 If the Recall System is unavailable or malfunctioning, obtain photographs or photocopies of pertinent plant parameters. Ensure that any such photographs or photocopies are clearly labeled with date, time, and tag number of the device, and are included in the restart package.

4.2.1.2 Following a reactor trip the Computer Alarm System printout switches to the line printer.

4.2.1.3 Any member of the Nuclear Safety Section may assist in the data collection effort as designated by the Nuclear Safety Supervisor. Additional personnel may assist in the data collection or analysis effort as designated by the NPM/MOC or Shift Supervisor on Duty (SSOD).

4.2.1.4 All times noted on Enclosure 1 should be clearly labeled with the source of that time (Annunciator, Recall, Computer Alarm, Nuclear Operator or Shift Supervisor log, etc.). This will assist in assembling a sequence of events for the transient.

4.2.1.5 When assembling the Sequence of Events, it is necessary to correct the various data collection system times to a common time reference. This time reference should be chosen on the basis of convenience (i.e., if most of the data is taken from the Annunciator printout, use the Annunciator system time as the reference; if most of the data is taken from the Computer Alarm system, use this time as the reference, etc.). Once a reference system is selected and noted, a data point common to all data collection systems (such as CRD Trip Confirm/Reactor Trip) will be found. Time corrections based on the reference time are determined and noted. The Sequence of Events can then be assembled into a single coherent chronology.

4.3 RESTART DECISION

4.3.1 When Sections I through V of Enclosure 1 are complete, the SOTA and NPM/MOC will review and discuss the document. This review should ensure that the root cause of the event has been determined (if possible) and should ensure that adequate corrective actions have been proposed to prevent recurrence of the event. Plant transient response should be compared to expected responses to verify proper system performance. In addition all identified performance anomalies should be assessed for impact on nuclear safety, equipment reliability, system performance, or plant availability.

4.3.2 The above review will be documented by completing Item A of Section VI. This section formally documents completion of the data review.

4.4 INDEPENDENT REVIEW

4.4.1 Upon completion of Item A of Section VI, the Plant Review Committee (PRC) shall be convened to review the restart evaluation. The PRC quorum shall include representatives from Licensing, Maintenance, Nuclear Safety and Reliability, Operations, and Engineering. The PRC Chairman will determine what additional representation from other departments is necessary.

4.4.2 The PRC shall review the restart evaluation with particular attention to Section IV, "Automatic System Challenges and Plant Response". The committee shall also review the corrective actions proposed for any significant equipment malfunctions. Primary consideration must be given to determining what troubleshooting and/or repairs need to be completed prior to restart.

4.4.3 The PRC Chairman will indicate the committee's recommendation to restart the reactor by signing Item B of Section VI. Any recommendations of the PRC should be attached to that enclosure for consideration by the NPM/MOC.

4.4.4 Upon completion of the Independent Review by the PRC, the NPM/MOC shall review all sections of Enclosure 1 and any PRC recommendations attached. When the NPM/MOC is satisfied that all corrective actions required prior to restart are complete and that no outstanding safety concerns remain, he shall sign Item C of Section VI. This signature authorizes restart of the reactor. Enclosure 1 will then be given to the SSOD for review and signature prior to restart of the reactor. The restart package, consisting of the completed Enclosure 1 of this procedure and all supporting documentation, should be forwarded to the Nuclear Safety Supervisor for further evaluation.

NOTE: **In the interim between trip and approval for recovery, the Nuclear Shift Supervisor may authorize the withdrawal of Safety Group 1 provided a 1% delta-k/k shutdown margin is maintained and rod withdrawal is not prohibited by any RPS "Action Statements" of Standard Technical Specifications.**

4.5 SUBSEQUENT EVALUATION

4.5.1 Overview

4.5.1.1 Further evaluation of reactor trip events will be conducted to satisfy reporting requirements, to inform other utilities of our experience and lessons learned from the event, and to document observed plant response for future study and comparison.

4.5.1.2 For reactor trips, a site visit by Babcock and Wilcox (B&W) personnel should be requested under the Transient Assessment Program. This visit, arranged by the Nuclear Safety Supervisor through the B&W Resident Engineer, will assist Nuclear Safety Group personnel in investigating the event and in preparing an initial written assessment of the event. The site visit, when requested, should begin within twenty-four hours of the event or on the first normal working day following the event if it occurs on a weekend or holiday.

4.5.1.3 The following reports are prepared in the course of subsequent evaluation of a reactor trip:

- Nuclear Network Entry
- Licensee Event Report
- Unplanned Operating Event Report
- Transient Assessment Program Report

Preparation of each report is described below.

4.5.2 Nuclear Network Entry

A Nuclear Network Entry should be made covering the reactor trip event. The entry should be made within one working day of the event and may be prepared by any member of the Nuclear Safety Group. The entry should be a brief summary of the event, including contributing unusual pre-trip lineups, cause(s) of the event if known, and significant post-trip abnormalities. The entry should be placed on Nuclear Network in the Operating Plant Experiences (OE) topic if the event is of interest to the entire nuclear community or in the B&W Owners Group (BW) topic if the event is of interest only to other B&W designed plants. Any entry concerning the event must have Nuclear Plant Manager or Man On Call approval prior to placing it on the Nuclear Network.

4.5.3 Licensee Event Report (LER)

As required by 10CFR50.73, any unplanned actuation of the Reactor Protection System (i.e., reactor trip) must be reported in writing to the Nuclear Regulatory Commission within thirty days of the event. This report is prepared in accordance with CP-111, "Documenting, Reporting, and Reviewing Non-Conforming Operations Reports", and NUREG-1022, "Licensee Event Report System", and its supplements.

4.5.4 Unplanned Operating Event Report (UOER)

4.5.4.1 Upon receipt of the restart package for a reactor trip event, the Nuclear Safety Supervisor will assign a UOER number by year and numerical sequence (e.g., UOER 85-3 for the third event of 1985). He will then assign responsibility for preparation of the UOER to a member of the Nuclear Safety Group and deliver the package to that person.

4.5.4.2 The Nuclear Safety Group member assigned responsibility for preparation of the UOER will fully investigate the event. If deemed necessary, Corrective Action Assignments (CAAs) may be made in accordance with CP-125, "Corrective Action Procedure". In order to preclude duplication, all CAAs assigned should carry the designation of the Non-Conforming Operations Report (NCOR) associated with the event rather than the LER or UOER designation. When investigation is complete, the responsible member will prepare the UOER using guidance from the Babcock & Wilcox "Transient Assessment Program (TAP) Guidelines".

4.5.4.3 When the UOER is complete, it will be reviewed and approved by the Nuclear Safety Supervisor, Nuclear Safety and Reliability Superintendent, Nuclear Plant Technical Support Manager, and Nuclear Plant Manager.

4.5.4.4 Upon approval by the Nuclear Plant Manager, the UOER will be distributed per Enclosure 2, "UOER Distribution".

4.5.4.5 The UOER preparation process is summarized in Enclosure 3, "Unplanned Operating Event/Transient Assessment Report Flow Diagram".

4.5.5 <u>Transient Assessment Program Report (TAP)</u>

Following approval of a UOER by the Nuclear Plant Manager, it may be forwarded to the Babcock & Wilcox Resident Engineer for inclusion in the Babcock and Wilcox Owners Group Transient Assessment Program.

ENCLOSURES

Enclosure 1 Post-Trip Review and Restart Justification

Enclosure 2 UOER Distribution

Enclosure 3 Unplanned Operating Event/Transient Assessment Report Flow Diagram

POST-TRIP REVIEW AND RESTART JUSTIFICATION

Shutdown Report Number: ____________________
(From AI-500 Enclosure 11)

Trip Date: ____________ Trip Time: ____________
SSOD During Trip: ____________ NO During Trip: ____________
SOTA During Trip: ____________ ANO During Trip: ____________
MOC During Trip: ____________

I. DATA COLLECTION

A. Gather the following information as appropriate or available:

Annunciator Events	___	Logs:		Shift Relief Checklist:	
Computer Alarms	___	NSS	___	NSS	___
Recall Tapes	___	NO	___	NO	___
Post-Trip Review	___	Other	___	Other	___
Shutdown Report	___	OOS/Links	___	RC Inventory Tracking:	
STI (if applicable)	___	Clearance	___	Level	___
Operator Interviews	___			Voids	___

B. Determine which actuation(s) occurred:

1. RPS First, each actuation/trip must be identified and CRD trip response determined. Each RPS cabinet should be checked for 1) all RPS actuations, and 2) CRD Breaker Open light which indicates proper CRD breaker and electronic trip response. Second, the actuation times must be determined. The Main Control Board will indicate "first out". All data sources should be examined for times in the following priority: A(nnunicator), R(ecall), C(omputer). Indicate the data source used for time in the Time column.

Data Sources:
Annunciator Printout (A) Computer Alarms Printout (C)
Recall Tapes (R) RPS Cabinet (RC)

Trip Parameter	Channel A Y N Time	Channel B Y N Time	Channel C Y N Time	Channel D Y N Time
RCPPM	_ _ ____	_ _ ____	_ _ ____	_ _ ____
$\phi/\Delta\phi$/Flow	_ _ ____	_ _ ____	_ _ ____	_ _ ____
Hi Press RB	_ _ ____	_ _ ____	_ _ ____	_ _ ____
High ϕ	_ _ ____	_ _ ____	_ _ ____	_ _ ____
Hi Press RCS	_ _ ____	_ _ ____	_ _ ____	_ _ ____
Lo Press RCS	_ _ ____	_ _ ____	_ _ ____	_ _ ____
Var Lo Press	_ _ ____	_ _ ____	_ _ ____	_ _ ____
High T_{hot}	_ _ ____	_ _ ____	_ _ ____	_ _ ____
ART MFWP	_ _ ____	_ _ ____	_ _ ____	_ _ ____
ART Turbine	_ _ ____	_ _ ____	_ _ ____	_ _ ____
Manual	_ _ ____	_ _ ____	_ _ ____	_ _ ____
CRD Bkr Open	_ _ ____	_ _ ____	_ _ ____	_ _ ____

2. ES As above for RPS, all ES actuations/trips and times must be determined using the available data sources.
Data sources:
Annunciator Printout (A) Computer Alarms Printout (C)
Recall Tapes (R) ES Panel/Cabinets (E)

Channel		Train A Y N Time	Train B Y N Time
HPI	RC1	_ _ ______	_ _ ______
	RC2	_ _ ______	_ _ ______
	RC3	_ _ ______	_ _ ______
LPI	RC4	_ _ ______	_ _ ______
	RC5	_ _ ______	_ _ ______
	RC6	_ _ ______	_ _ ______
RBIC	RB1	_ _ ______	_ _ ______
	RB2	_ _ ______	_ _ ______
	RB3	_ _ ______	_ _ ______
BS	RB4	_ _ ______	_ _ ______
	RB5	_ _ ______	_ _ ______
	RB6	_ _ ______	_ _ ______

3. Other ESFAS As above, examine the available data sources to determine if and when any of the following systems actuated:

ESFAS	Y N Time	Comments
Rad Mon	_ _ ______	______
EFIC EFW	_ _ ______	______
EFIC MSLI	_ _ ______	______
EFIC MFWI	_ _ ______	______
EFIC Ovrfill	_ _ ______	______
CFT	_ _ ______	______

4. Other As above, examine available data sources to determine if and when any of the following systems actuated:

Main Turb Trip	Y N Time	Comments
Low Vacuum	_ _ ______	______
Low Cont Oil	_ _ ______	______
Thrust Brg ΔP	_ _ ______	______
Solenoid	_ _ ______	______
Manual	_ _ ______	______
ICS Runback		
RCS Flow	_ _ ______	______
MFWP's Trip	_ _ ______	______
MFWBP's Trip	_ _ ______	______
Assym Rods	_ _ ______	______

II. PRE-TRIP/EVENT REVIEW

A. Major plant parameter/component status:

Mode	_______	Main Turbine-Generator	
Rx Power	_______MWth	Mode	MAN/AUTO/ICS AUTO
RCP's on	A B C D	Output Breakers	OPEN/CLOSED
MFWP's on	A B	Generated MW	_______ MWe
MUP on	A B C		

B. ICS and other control station status:

H = Hand A = Automatic

	H	A	MFW	"A" H	"A" A	"B" H	"B" A	Pressurizer	H	A	
ULD	__	__	MFWP	__	__	__	__	Level	__	__	
S/G Rx Master	__	__	MBV	__	__	__	__	Spray	__	__	
Rx Demand	__	__	LLBV	__	__	__	__	Heater	__	__	
Rx Diamond	__	__	LLCV	__	__	__	__				
Delta T-Cold	__	__	SUBV	__	__	__	__	PORV	Open	Clos	Auto
TBV	__	__	SUCV	__	__	__	__	PORV Block	Open	Clos	
ADV	__	__						Spray Control	Open	Clos	Auto
								Spray Block	Open	Clos	

C. Maintenance or testing in progress:

____
____
____
____
____
____

D. Equipment Availability:

A = Available D = Degraded N = Not Available

1. Safety-Related equipment/component degraded or out of service:

	A	D	N	Comments
RPS	_	_	_	______________
ES	_	_	_	______________
EFIC	_	_	_	______________
Elec Pwr	_	_	_	______________
Other	_	_	_	______________

2. Important non-safety related equipment/component degraded/OOS:

	A	D	N	Comments
ICS	_	_	_	______________
Turbine	_	_	_	______________
Other	_	_	_	______________

III. CAUSE DETERMINATION

A. SEQUENCE OF EVENTS

1. Time Correction

Using an event known to be common to the Annunciator, Recall, and Computer Alarm systems, determine the relationship between Annunciator time, Recall time, and Computer Alarm time. Record these time relationships below (select the most convenient of the three systems and reference the other two to that system). +/- min:sec

Annunciator time: _______:_______

Recall time: _______:_______

Computer Alarm time: _______:_______

2. Sequence of Events

In the spaces below, assemble a sequence of events for the major pre-trip and post-trip occurrences.

Time	Data Source	Corrected Time	Event

2. Sequence of Events (Continued):

Time	Data Source	Corrected Time	Event

B. POTENTIAL CAUSES

In the spaces below, list all potential causes and/or contributing factors leading to the reactor trip. When all potential causes are listed, determine what testing needs to be performed to prove or disprove each cause or contributing factor. From the results of this testing, determine the degree of involvement of each cause (i.e., whether each cause/contributing factor is a root cause, intermediate cause, immediate cause, or not involved in the trip). Finally, list any corrective actions deemed necessary to preclude similar events in the future.

Root Cause = (R) Intermediate Cause = (IN)
Immediate Cause = (IM) Not Involved = (N)

	Cause or Contributing Factor	Test of Possible Cause	Degree Involved	Necessary Corrective Action
1.	________	________	________	________
	________	________	________	________
	________	________	________	________
2.	________	________	________	________
	________	________	________	________
	________	________	________	________
3.	________	________	________	________
	________	________	________	________
	________	________	________	________
4.	________	________	________	________
	________	________	________	________
	________	________	________	________
5.	________	________	________	________
	________	________	________	________
	________	________	________	________
6.	________	________	________	________
	________	________	________	________
	________	________	________	________

Root Cause = underlying condition or factor which when corrected minimizes the probability of recurrence of the event or similar events.

Intermediate Cause = condition or factor which led from a root cause to an immediate cause.

Immediate Cause = condition or factor which directly led to the event.

NOTE: Refer to NUREG-1022 Supplement 2, Pages 8 through 11, for examples of the above definitions.

IV. AUTOMATIC SYSTEM CHALLENGES AND PLANT RESPONSE

A. SAFETY SYSTEM CHALLENGES AND RESPONSE

Using the data sources available, determine the maximum values, minimum values, and minimum margins that occurred throughout the event. Compare these values to the actuation setpoints, determine if the safety systems were challenged, and using the prior recorded actuations determine if the expected response was achieved.

Parameter	Value Max	Value Min	Value Marg	Recall Pts (Note 1)	Setpoints RPS ES EFIC	Challenged Y	Challenged N	Expected Response Y	Expected Response N
RCPPM		____		129-132	2 Off	__	__	__	__
ϕ/Δϕ/Flow (Note 2)			____	0-3,31,32 58-61	STS Figure 2.2.1	__	__	__	__
Hi Press RB	____			82,83	4 psig	__	__	__	__
High Flux	____			0-3	104.9% or 79.92%	__	__	__	__
High Press	____			4-6	2300 psig	__	__	__	__
Low Press		____		4-6	1800 1500/500	__	__	__	__
Var Lo Pres (Note 3)			____	6,14,15	(11.59 x Thot) - 5037.8 psig	__	__	__	__
High T_{hot}	____			14,15	618 F	__	__	__	__
ART MFWP		____		--	2 Off at >20%	__	__	__	__
ART Turbine		____		170	Trip at >20%	__	__	__	__
OTSG Press		____		104, 105	600 psig	__	__	__	__
OTSG Level		____		90,91	6 inches	__	__	__	__

NOTE 1: The following Recall points can be put into User-Defined Groups 0 for ease in data collection:
Points 0, 1, 2, 3, 4, 5, 6, 14, 15, and 170.
Points 82, 83, 90, 91, 104, 105, 129, 130, 131, and 132.
Points 31, 32, 58, 59, 60, and 61 (if 0/∆0/Flow plot is needed).

NOTE 2: If no loss of RCS flow occurs, this parameter may be checked by selecting the highest power and the largest (in absolute value) imbalance and comparing this point to STS Figure 2.2.1. If this point of maximum power and maximum imbalance lies within the region for acceptable operation, the margin may be noted as "Satisfactory". If the point of maximum power and maximum imbalance lies outside the region for acceptable operation, then a plot of power versus imbalance is required. If a loss of RCS flow occurs without a 0/∆0/Flow trip, then a plot of power, RCS flow, and imbalance is required.

NOTE 3: This parameter may be checked by visual inspection of the SPDS Post-Trip Display. If the trace did not cross the variable low pressure trip line, or if the SPDS Post-Trip Display was not available for visual inspection, then a plot of variable low pressure is required.

B. PLANT RESPONSE

1. Reactivity Control

a. Control Rods:

RPS - Determined above in IV.A.: SAT ______ UNSAT ______

b. Boration:

Source	Used Y N	Flow Rate	Length Of Time	Amount	Required for Reactivity Control Y N
BWST	__ __	______	_______	______	__ __
CBAST	__ __	______	_______	______	__ __

c. 1% Shutdown Margin:

Was 1% shutdown margin achieved and maintained? YES NO
If "NO", explain below.

____

____

2. Thermal Control

a. Core Heat Removal Mode:

Method	Y	N	Comments			
OTSG with RCPs	__	__	______________________			
OTSG w/o RCPs	__	__	______________________			
HPI	__	__	Flow Rate	_________		
			Amount	_________	Temp	_________
LPI	__	__	Flow Rate	_________		
			Amount	_________	Temp	_________
Core Flood	__	__	Amount	_________		

b. Major parameters:

Parameter	Min	Max	Limit or Setpoint	Comments
RCS Pressure	___	___	2500 1500 500 psig	PORV Opened Y N Safties Opened Y N
RCS Temp	___	___		
RCS Cooldown		___	100 F/Hour if T_{cold} < 500 F	PTS Concerns if T_{cold} < 500F
Pzr Level	___	___	2nd MUP or HPI	Used: MUV-23 24 25 26 MUP-1A 1B 1C
RCS P/T Subcooled Post-Trip	___	___	50/20 F Per SPDS Display	
OTSG Pressure "A"	___	___	1010 600	Open ADV Y N Reseat ADV Y N
			1050 psig	Open MSV 33 34 Reseat MSV 33 34
			1070 psig	Open MSV 37 38 Reseat MSV 37 38
			1090 psig	Open MSV 42 43 Reseat MSV 42 43
			1100 psig	Open MSV 40 46 Reseat MSV 40 46
"B"	___	___	1010 600	Open ADV Y N Reseat ADV Y N
			1050 psig	Open MSV 35 36 Reseat MSV 35 36
			1070 psig	Open MSV 39 41 Reseat MSV 39 41
			1090 psig	Open MSV 44 45 Reseat MSV 44 45
			1100 psig	Open MSV 47 48 Reseat MSV 47 48
OTSG Level "A"	___	___	35" 98%	EFIC EFW Y N Flow: A1 ____ gpm A2 ____ gpm
"B"	___	___	35" 98%	EFIC EFW Y N Flow: B1 ____ gpm B2 ____ gpm

3. Radioactive Inventory Control

System		Alarm Y	Alarm N	Comments
Main Steam	RM-A12	___	___	
	RM-G's	___	___	
SW	RM-L3	___	___	
DC	RM-L5	___	___	
	RM-L6	___	___	
Reactor Bldg	RM-A1	___	___	
	RM-A6	___	___	
	RM-G's	___	___	
	Sump	___	___	
RCS	RM-L1	___	___	
	RCDT	___	___	
Aux Bldg	RM-A2	___	___	
	RM-A3	___	___	
	RM-A4	___	___	
	RM-A11	___	___	
	RM-L2	___	___	
	MWST	___	___	
Control Complex	RM-A5	___	___	
	RM-A14	___	___	
	RM-G1	___	___	

3. Equipment Availability

List any equipment that did not perform as expected. Include any Work Request or NCOR numbers in the Corrective Action column. Place a check in the appropriate column to indicate whether completion of the Corrective Action is required before restart or whether the Corrective Action may be completed after restart. Any Corrective Actions marked as required before restart must be completed before restart is authorized.

Number	Malfunction	Proposed Corrective Action	Action Taken Before/After Restart	

V. SUMMARY

In the space below provide a brief narrative summary of the event. Include as a minimum all significant abnormal pre-trip lineups, discussion of the cause or causes of the trip, and significant post-trip abnormalities.

VI. RESTART REVIEW AND APPROVAL

A. Post-Trip Review completed:

SOTA	Date

B. Restart recommended:

PRC Chairman	Date	Meeting #

C. Restart authorized:

NPM/MOC	Date

D. Reviewed prior to restart:

SSOD	Date

UOER DISTRIBUTION

- o Vice President, Nuclear Operations
- o Director, Nuclear Operations Engineering & Licensing
- o Nuclear Plant Manager
- o Nuclear Operations Manager
- o Nuclear Operations Superintendent
- o Nuclear Maintenance Superintendent
- o Nuclear Chemistry/Radiation Protection Superintendent
- o Nuclear Plant Technical Support Manager
- o Nuclear Engineering Superintendent
- o Nuclear Safety & Reliability Superintendent
- o Chairman, Nuclear General Review Committee
- o Nuclear Operations Training Manager
- o Plant Quality Files
- o Manager Site Nuclear Licensing
- o Manager Nuclear Licensing

UNPLANNED OPERATING EVENT/TRANSIENT ASSESSMENT REPORT FLOW DIAGRAM