AP.28

10→← POST TRIP TRANSIENT INVESTIGATION, ASSESSMENT, AND REPORTING

1.0 PURPOSE

1.1 Pre-Startup Investigation and Assessment

To provide a systematic method for diagnosing the cause(s) of a Reactor trip, ascertaining the proper functioning of safety-related and other important equipment during the trip, determining any detrimental effect on plant equipment caused by the trip, and making the determination that the plant can be restarted safely.

1.2 Trip Report Development and Approval

To provide for a detailed account of the trip, and to develop and adopt long-term corrective actions to be taken.

2.0 REFERENCES/COMMITMENT DOCUMENTS

2.1 References

10→← 2.1.1 AP.78, Engineering Action Request

2.1.2 Adapted from INPO Good Practice OP-211

2.1.3 Technical Support Guidelines, MEG.203

2.1.4 AP.1, Responsibilities and Authorities

10→ 2.1.5 Plant Operations Manual, Procedure A.75, A.75A -- Plant Computers

← 2.1.6 RSAP-0803, Work Requests

2.1.7 AP.39, Distribution of Nuclear Operations Correspondence

10→← 2.1.8 AP.23.25, Shift Technical Advisor Transient Evaluation Guidelines

2.2 COMMITMENTS

2.2.1 Technical Specifications 6.2.2.g, 6.5.1.6, 6.9.4.1. 6.10.2.f

2.2.2 R. J. Rodriguez to J. F. Stolz (NRC): letter of 1/21/85 (RJR 85-40)

THIS PROCEDURE/MANUAL IS DISTRIBUTED THROUGH
THE MAP, ZB- DOCUMENT CONTROL PROCEDURES AND
MAY NOT REFLECT THE LATEST REVISION.
ASSIGNED TO MANUAL # 2
Rev. 10

8803240407 880316
PDR ADOCK 05000312
P DCD

DEFINITIONS (Continued)

3.0 DEFINITIONS

10→ 3.1 Data Package - Enclosure 8.1 thru 8.4 and their attachments. Any transcriptions of taped Plant Personnel statements. In the case of a Type I Event Review, the PRC Data Package may be summarized.

3.2 Event Type Definitions

3.2 .1 Type I:
At the time of trip classification, by consensus of all members of Shift Management, the plant is in a condition to be safely restarted and operated with all the screening criteria in Enclosure 8.5 circled "Yes."

3.2 .2 Type II:
10→ The cause of the trip is not positively known,
OR
Safety-related or other important equipment functioned in an abnormal or degraded manner during the trip with the malfunction not positively corrected, unless redundant
equipment is available to allow start-up.

3.3 Management Duty Officer (MDO) - person so-appointed by the Director, Operations and Maintenance.

3.4 Plant Trip - Generator, Reactor or Turbine Trip that is not part of a planned plant progression.

3.5 Shift Management - the combination of Shift Supervisor, Assistant Shift Supervisors, and the Operations Technical Advisor.

10→← 3.6 TAP - The Babcock and Wilcox Co. (B&W) Transient Assessment Program.

3.7 TAP Team Coordinator - A SMUD employee designated to be the liason with TAP.

3.8 Trip Witness - an individual involved in the trip, e.g. Reactor Operators, Maintenance Technicians, etc.

4.0 PREREQUISITES

4.1 Any of the following conditions shall cause this procedure to be activated:

4.1 .1 A Plant Trip occurs

4.1 .2 The Shift Supervisor elects to activate this procedure on a non-trip plant transient

10→← 4.1 .3 The Supervisor of the Independent Investigation/Review Group elects to activate this procedure on a non-trip plant transient.

5.0 PRECAUTIONS

5.1 Prior to the initiation of data gathering, the Shift Supervisor shall judge that data gathering will not impede the Operators' control of the plant.

5.2 Record CRD breaker positions and SFAS initiation status before any reset (Enclosure 8.1).

5.3 If plant conditions change, any licensed Operator may temporarily interrupt the performance of this procedure.

10→ 5.4 If it is the decision of the Independent Investigation/Review Group Supervisor to enter this procedure after the witnessing Operations crew has gone home, the crew has two requirements: to complete its sections of this procedure on its next regular shift in, and noting in "remarks" sections if its recollections are indeterminate.

5.5 The original Trip Classification and Startup Approval (Enclosure 8.5) should be placed in the Trip Report File Cabinet as soon as possible. This enhances the chances of easy retrieval for the "permission to start up" signatures.

5.6 The completeness doublecheck shall be finished before releasing Trip Witnesses from their shift. Exceptions are:

5.6 .1 The Shift Supervisor determines that the individual will otherwise work more than three hours beyond limits of AP.1 or successor procedures. For the purpose of completing Plant Personnel Statements, this procedure step shall be considered the prior written permission by the Director, Operations and Maintenance.

- 5.6 .2 Trip witnesses can be released earlier, by decision of Operations Senior management.

5.7 Once the event is classified as a Type II, no reclassification to Type I is allowed.

5.8 A person other than the duty SS or duty ASST or duty OTA shall make the restart decision.

6.0 PROCEDURE

6.1 The responsibilities listed below apply to their performance of this procedure.

6.1 .1 Director, Operations and Maintenance (DOM)

6.1 .1.1 The decision to start up the reactor.

6.1 .1.2 The Designation of Management Duty Officers empowered to make the restart decision.

RESPONSIBILITIES (Continued)

6.1 .1.3 The Approval of the Trip Report and desirable Recommendations.

6.1 .1.4 The formation of investigative team(s) for a Type II Event.

6.1 .1.5 Approval of TAP report.

10→← 6.1 .2 Independent Investigation/Review (IIR) Group Supervisor

6.1 .2.1 That lessons learned are used to improve plant safety and reliability.

6.1 .2.2 The transfer of inhouse experience of generic interest to the industry.

6.1 .2.3 The maintenance of the Trip Report File, until turned over to Records Information.

10→ 6.1 .3 Management Duty Officer (MDO)

6.1 .3.1 Notification of the SMUD TAP representative and other appropriate members of management.

6.1 .3.2 Notification of the NRC Resident Inspector(s).

6.1 .3.3 Making the restart decision if so designated by the Director, Operations and Maintenance. ←

6.1 .4 Plant Personnel

6.1 .4.1 By means of the Plant Personnel Statements of Section 6.4.6, providing a member of Shift Management or Senior Operations Management with:

6.1 .4.1.1 Objective comments that describe their own observations of the event.

6.1 .4.1.2 Objective comments that describe their own participation in the trip event.

6.1 .4.1.3 Recommendations to prevent recurrence of the event.

6.1 .5 Plant Review Committee (PRC)

10→← 6.1 .5.1 Review of the Data Package and Sequence of Events. In the case of a Type II Event, the PRC shall complete its review prior to restart, if so directed by the AGM, Nuclear Power Production.

RESPONSIBILITIES (Continued)

10→ 6.1 .5.2 Review of the formal Trip Report recommendations. Because the Trip Report Writer is allowed to make subjective recommendations, the PRC can recommend disapproval of a recommendation, but needs to negotiate amendments with the Trip Report Writer.

6.1 .5.3 Adding Recommendations to make the Trip Report complete.

← 6.1 .5.4 Review of TAP report.

10→ 6.1 .6 Operations Department

6.1 .6.1 Investigation phase of Data Gathering

6.1 .6.2 The Shift Supervisor can yield, as directed by Operations senior Management, the review and approval of the investigation results.

6.1 .6.3 Trip Classification

6.1 .6.4 Only the Shift Supervisor can make the recommendation to restart the reactor.

6.1 .7 Operations Technical Advisor (OTA)

6.1 .7.1 Formulate and express judgement to the MDO and appropriate others on the classification of the trip.

6.1 .7.2 Data gathering, subject to the limitation of AP.23.25 that gathering may not proceed until one hour after the end of the transient. Assistance during the Investigation phase.

6.1 .7.3 That transcripts be made of tape recorded Personnel Statements.

6.1 .8 Trip Report Writer

6.1 .8.1 Control use of the original Data Package. If access must be granted to other individuals, (e.g. a TAP team), develop administrative controls so that the original Data Package can be filed with the Trip Report.

6.1 .8.2 Use enough explanation in the Trip Report Sequence of Events section so that it could be used as a stand-alone document for experienced plant personnel.

RESPONSIBILITIES (Continued)

6.1 .8.3 The supporting Trip Report sections need to objectively analyze selected events and explain, to the level of someone with system training, the relationship between those selected events.

6.1 .8.4 When a Trip Report Recommendation is subjective, ensure the reasoning behind it is explained within the recommendation.

6.1 .8.5 Delivery to the DOM of a draft-for-approval Trip Report within 28 days of the event, or as otherwise negotiated with the Director, Operations and Maintenance.

6.1 .8.6 The delivery to the IIR Group Supervisor of file, and the organization of the file for the approved Trip Report, including copies of EARs.

6.1 .9 Transient Assessment Program Coordinator

6.1 .9.1 Notify B&W of trip - negotiate B&W representatives to report for trip review.

6.1 .9.2 Schedule TAP Team Review and escorts and clerical support.

6.1 .9.3 Conduct entrance review and exit meetings.

6.1 .9.4 Turnover draft report to Trip Report Writer and PRC.

6.1 .9.5 Send final trip report to TAP Program Manager.

10 6.2 General Instructions (Information Only)

The post-trip transient review process has six major steps, as follows:

	STEP	RESPONSIBILITY
6.2 .1	Initiation/Data Gathering	Operations Department
6.2 .2	Nuclear Safety Assessment/ Trip Classification	Operations Department
6.2 .3	Start-up Decision	Director, Operations and Maintenance
6.2 .4	Data Package/Sequence of Events Review	PRC
6.2 .5	Trip Report Writing	Independent Investigation/Review Group Supervisor
6.2 .6	PRC Review and Review of TAP Reports/Approval	PRC/Director, Operations and Maintenance

PROCEDURE (Continued)

6.3 Initiation (Pre-Startup)

NOTE: Management Notification should be made in advance of NRC red phone notifications, if possible, to afford additional evaluation of the events.

6.3 .1 Shift Management shall call the Management Duty Officer.

6.3 .1.1 The Management Duty Officer list and schedule is available in the Control Room.

6.3 .1.2 The contacted Management Duty Officer will then notify the Manager, Operations Department, and the AGM, Nuclear Production.

6.3 .1.3 The Management Duty Officer contacted shall assure that a management representative informs the NRC Resident Inspector as soon as possible.

6.3 .1.4 The NRC Resident or his designee may call the Control Room once notified of the transient situation to request a briefing. The Shift Supervisor or his designee will provide the NRC Resident a description of the event with the appropriate detail and length commensurate with the operational demands placed upon the Shift Supervisor and crew. In briefest form, the report may be one or two sentences describing the basic nature of the event.

6.4 Data Gathering (Pre-Startup)

6.4 .1 Record CRD breaker positions and SFAS initiation status before any reset. (Enclosure 8.1)

6.4 .2 As simultaneously as possible for all Control Room recorders, time-mark the charts adjacent to the pen/printhead. A precise, narrow mark soon after the transient ends can aid later sequence-of-events resolution.

6.4 .3 For chart gathering, there are three acceptable methods. The Control Room Operator can be consulted for preferences.

6.4 .3.1 Charts may be snipped, photocopied, then spliced to the original.

10→ 6.4 .3.2 Charts may be photographed.

6.4 .3.3 If a photocopier is close by, charts may be wholly removed, a portion copied, and the roll wholly replaced.

6.4 .4 Label each collected chart with its source.

PROCEDURE (Continued)

10→← CAUTION: Bailey computer "Sequence of Events" and "Memory Trip Review" functions, if cancelled, are lost. Because the utility typer must be shared for real-time monitoring and trip data gathering, call up only one Bailey function at one time.

6.4 .5 Retrieve computer printouts.

6.4 .6 Complete Enclosures 8.1 and 8.2.

6.4 .7 Plant Personnel Statements

6.4 .7.1 After the plant is in a safe, stable condition, Shift Management shall ensure each Trip Witnesses provides a statement concerning his/her involvement in the reactor trip.

6.4 .7.2 These statements may be obtained in one of the following ways: 1) self-written statements; 2) tape recorded interviews with personnel involved in the reactor trip, conducted by the Operations Department. Written summaries 10→ ← of the tapes may be prepared and used.

6.4 7.3 For self-written statements, use Enclosure 8.3. Read and initial statements of nearby personnel so that, with your statement's assistance, an accurate and complete picture results.

6.4 .7.4 The written statements shall be included in the reactor trip data package to assist in the event reconstruction.

6.4 .7.5 Restrict statements to facts concerning the event; the facts should be stated chronologically, if possible.

10→ ← 6.4 .7.6 Tape recorded interviews will be transcribed, usually within 5 working days.

6.5 Data Completeness Doublecheck (Pre-Startup)

6.5 .1 The OTA will review the collected data.

6.5 .2 Any followup questions are best asked at this time, while the events are fresh in everyone's mind. Use "Remarks" areas for the documentation space.

6.6 Nuclear Safety Assessment (Pre-Startup)

6.6 .1 The purpose of this section is to review the collected data so that a trip classification can be performed.

PROCEDURE (Continued)

6.6 .2 Analysis of Transient

10→← Operations Department personnel will reconstruct the transient by completing Enclosure 8.4 using the collected data. A chronological description of the event will be developed, using all available data. Pertinent alarms, trips, actuations, and isolations can be
10→← listed or marked on the alarm typer printouts. Pertinent plant parameters should be incorporated into the chronological list of events during the reconstruction.

6.6 .3 The trip and transient shall be compared to the expected trip response, based on the training and experience of licensed operators.

CAUTION: FSAR transients are "worst case" or limiting conditions. Do not assume that because a transient did not result in peak parameters exceeding the FSAR values that the plant response was acceptable.

10→← 6.6 .4 As directed by the Director, Operations and Maintenance the Operations Department shall perform a comparison with previous trip reports or FSAR transients.

6.6 .5 Analysis of Equipment Behavior

NOTE: Look beyond the obvious indications to diagnose the cause of the trip and evaluate the plant response. Review the available information thoroughly. Look for (1) abnormal indications or degraded trends in equipment performance, (2) events occurring out of the normal or anticipated sequence, (3) failed or degraded response of equipment to control signals, (4) unusual chemistry results or radiation readings, and (5) unanticipated alarms.

6.6 .5.1 Determine:

6.6 .5.1.1 If all major safety-related and other important equipment involved in the trip operated as anticipated or expected, and

6.6 .5.1.2 If the trip/transient caused any detrimental effects on plant equipment, and

6.6 .5.1.3 The most probable cause of the trip.

6.7 Trip Classification

6.7 .1 Based on the results of the analysis and evaluation of the plant trip and subsequent response, Operations Department Personnel shall classify the event as a Type I or Type II Event (on Enclosure 8.5).

PROCEDURE (Continued)

6.7 .2 Management Notifications

Once the reactor trip event is classified, notify management again as per steps 6.3.1 of this procedure.

6.8 Determination of restart conditions (Pre-Startup)

6.8 .1 Type I Event

Based upon this classification, the Shift Supervisor can recommend restart of the reactor. Use Enclosure 8.5 "remarks" to document pre-startup corrections.

6.8 .2 Type II Event

A team or teams will be appointed to perform the further investigation of the trip to determine necessary corrective action before restart.

NOTE: Sources of expertise that should be considered include nuclear steam supply vendors, vendor engineers, onsite engineering staff, corporate engineering staff, and other experienced operations and maintenance personnel.

10→← 6.8 .3 The team will analyze the event reconstruction, emphasizing the most probable cause of the trip and the resolution of abnormal or degraded indications. Use available expertise to resolve questic concerning the cause and plant response. Supply and document on
10→ Enclosure 8.5 the following information to the Director, Operations
← and Maintenance:

6.8 .3.1 The actual or most probable cause of the trip;

6.8 .3.2 The maintenance and testing necessary before reactor restart including additional measures to verify the most probable cause;

6.8 .3.3 Additional monitoring or trending required during and/or after reactor restart;

6.8 .3.4 Necessary briefings to operations and/or maintenance personnel concerning specific equipment indications or possible malfunctions; and

6.8 .3.5 The conditions necessary for a reactor restart.

PROCEDURE (Continued)

10→ 6.8 .4 Startup Decision

The Director, Operations and Maintenance or Designee shall evaluate the recommendation made by the personnel performing the trip investigation. For Type II Events, the AGM, Nuclear Power Production should consider convening the PRC to review the trip investigation prior to reactor restart.

10→← The Director, Operations and Maintenance shall ensure the following was done before allowing reactor restart:

6.8 .4.1 The most probable cause of the trip is known and corrected.

6.8 .4.2 Major safety-related and other important equipment functioned properly during the transient, or corrective maintenance and satisfactory testing has been performed or will be completed when plant conditions permit.

6.8 .4.3 The plant response during the event has been analyzed and the plant responded as anticipated, or abnormalities are understood and corrected as required by Technical Specifications except as described below.

10→← If the cause of the trip has not been positively identified, the Director, Operations and Maintenance shall determine if the cause and the circumstances surrounding the cause have been analyzed adequately. Adequate measure must be implemented to prevent repetitive challenges to safety systems during future power operations.

6.9 Trip Report Writing (Usually Post-Startup)

10→ 6.9 .1 The Supervisor of the Independent Investigation/Review appoints the head Trip Report Writer.

6.9 .2 The SMUD TAP Team Coordinator will determine if a B&W TAP Team site visit is necessary and the arrival date for the team. The B&W Resident Engineer will notify B&W of this decision. The TAP representative arranges for typing at the site.

6.9 .3 When B&W dispatches a TAP Team, the team helps evaluate the transient and prepares a draft assessment report.

6.9 .4 An entrance interview will brief any TAP Team on the transient. At ← least one trip witness should be present.

10→ 6.9 .5 Once a Operations Superintendent allows, the Writer acquires custody of all original collected data.

PROCEDURE (Continued)

6.9 .6 Make a verbal agreement with the TAP Team for sharing access to th Data Package, especially when a decision is made that photocopies are undesirable.

6.9 .7 A trip report number will be obtained from the Independent Investigation/Review Group custodian of the hardcopy Trip Report files and entered on the Trip Data Form.

NOTE: A draft-for approval in 28 days can assist in the development of any associated Licensee Event Report (LER).

6.9 .8 The number issuer will complete a Engineering Action Request (EAR) and forward it for a 28 day due date.

6.9 .9 The post-trip review data package will be reviewed to determine its significance to plant safety and reliability.

NOTE: Technical Support Guideline MEG.203 contains information on the Trip Report itself.

6.9 .10 During the generation of the Trip Report, the event will be evaluated to produce recommendations for corrective actions (e.g., procedure changes, design modifications, operator and plant staff training).

6.9 .11 A comparison should be made with previous similar trips in order to identify abnormal or degraded conditions.

10→ 6.9 .12 Any TAP Team will conduct an exit interview to discuss the transient. It is recommended that the TAP representative, Operations Manager, Unit Operations Superintendent, Shift Operations Superintendent, B&W Resident Engineer, a member of Shift Management on duty at the time of the transient, and all members of the TAP Team be present for the interview. Other staff members and a SMUD Nuclear Engineering Representative may be present.

6.9 .13 The TAP Team will retain a copy of the draft report and a photocopy of plant data package upon departing the site.

6.10 PRC Review

6.10 .1 Type I Event

The Trip Report Recommendations and Sequence of Events shall be reviewed by the PRC. This review is not required prior to reactor restart.

PROCEDURE (Continued)

6.10 .2 Type II Event

If directed by the AGM, Nuclear Power Production, the PRC will review a Type II Event before a reactor restart is commenced. In any case, a Type II Trip Report will receive a PRC review.

6.10 .3 PRC amendments may be made on Enclosure 8.6 without retyping the report. Justify amendments to recommended corrective actions.

10→ 6.11 Trip Report Approval (Usually Post-Startup)

← Submit the amended report to the Director, Operations and Maintenance, for approval of the recommended corrective actions.

NOTE: The Engineering Action Request (EAR) system will be used to track the implementation of the recommended corrective actions.

10→ 6.12 Review of TAP Reports

6.12 .1 After the exit interview with the B&W TAP Team the draft TAP report can be modified to incorporate comments generated in the exit. Members of Shift Management on duty at the time of the transient should receive a copy of the TAP report for comment.

6.12 .2 The draft TAP report can be modified or even rewritten as deemed necessary by the SMUD TAP representative.

6.12 .3 After the applicable Shift Supervisor and exit interview comments have been incorporated the draft TAP report will be sent for company review.

6.12 .4 The Plant Review Committee and the Director, Operations and Maintenance will review and approve the TAP report, thus making it the final report.

6.13 Distribution of TAP Reports

One of the major objectives of the program is the dissemination of available information to participating organizations. TAP reports should be released by SMUD to B&W within approximately 60 days of the transient. B&W will then distribute the reports to each participating ← utility.

6.14 Dissemination to the Industry (Time Frame Independent of Startup)

The Supervisor of the Independent Investigation/Review Group will determine what, if any, information on the trip will be useful to the industry, and is responsible for its dissemination via Nuclear Network, 10→← subject to AP.69, Usage of Nuclear Network at Rancho Seco.

PROCEDURES (Continued)

7.0 RECORDS

The trip report and data package shall be retained for the life of the plant. (Reference: Technical Specification 6.10.2.f)

8.0 ENCLOSURES

8.1 Trip Data

8.2 Secondary Safety and Dump Valves Temperature Stickers Data Sheet

8.3 Plant Personnel Statements

8.4 Analysis and Evaluations

8.5 Trip Classification and Restart Approval

8.6 Trip Report Amendment and Approval

8.7 Typical TAP Report Format

ENCLOSURE 8.1

TRIP DATA (Responsibility: Operations except for Trip No.)

Trip No. _____

10→← Independent Investigation/
Review Group

NOTE:
Of prime importance are those values or observations that are only obtainable from witnesses. Operator's statements must be completed before the end of their shift except as waived by the Operations Superintendent or higher management for Technical Specification 6.2.2.g compliance.

10→←

1. Plant Conditions Immediately Prior to Trip:

2. Testing/Maintenance or Contributing/Complicating Factors Prior to Transient:

NONE/AS FOLLOWS (Circle)

ENCLOSURE 8.1 (Continued)
TRIP DATA

3. Stanooy Equipment Response/Status:

CAUTION:
Circle only one status per period.

	During Pre-Trip Transient	At Trip	During Post-Trip Transient	How, Why, and Remarks
HPI Pump A	On/Off	On/Off	On/Off	
MU Pump	On/Off	On/Off	On/Off	
HPI Pump B	On/Off	On/Off	On/Off	
SFV-23811 HPI Nozzle	Open/Shut	Open/Shut	Open/Shut	Open for _____ minutes
SFV-23809 HPI Nozzle	Open/Shut	Open/Shut	Open/Shut	
SFV-23812 HPI Nozzle	Open/Shut	Open/Shut	Open/Shut	
SFV-23810 HPI Nozzle	Open/Shut	Open/Shut	Open/Shut	
Aux Feed Pump P-318	On/Off	On/Off	On/Off	
Aux Feed Pump P-319	On/Off	On/Off	On/Off	

ENCLOSURE 8.1 (Continued)
TRIP DATA

3. Standby Equipment Response/Status: (Continued)

	During Pre-Trip Transient	At Trip	During Post-Trip Transient	How, Why, and Remarks
Secondary Safety Valves	Open/Shut	Open/Shut	Open/Shut	_____ minutes open
Atmospheric Dump Valves	Open/Shut	Open/Shut	Open/Shut	_____ minutes open
Turbine Bypass Valves	Open/Shut Auto/Manual	Open/Shut Auto/Manual	Open/Shut Auto/Manual	
A-OTSG BTU Limits	In/Normal	In/Normal	In/Normal	
B-OTSG BTU Limits	In/Normal	In/Normal	In/Normal	
Big Boiler E-360	Run/Off	Run/Off	Run/Off	
Small Boiler E-365	Run/Off	Run/Off	Run/Off	
Throttle Stops	Not Cl/Cl	Not Cl/Cl	Not Cl/Cl	
	On HISS Indication			
Governor Valves	Rapid/Slow/ No/Movement	Not Cl/Cl	Not Cl/Cl	
		On HISS Indication		

ENCLOSURE 8.1 (Continued)
TRIP DATA

3. Standby Equipment Response/Status: (Continued)

	During Pre-Trip Transient	At Trip	During Post-Trip Transient	How, Why, and Remarks
RH Stops	Not C1/C1	Not C1/C1	Not C1/C1	
	On HISS Indication			
RH Intercepts	Not C1/C1	Not C1/C1	Not C1/C1	
	On HISS Indication			

4. Other Equipment Response:

	Taken to Manual Anytime	Performance Acceptable	Remarks
Rx - SG Master	Yes/No	Yes/No	
ΔTc controller	YES/NO	Yes/No	
Rx Master	Yes/No	Yes/No	
Diamond CRD	Yes/No	Yes/No	
Loop "A" FW Demand	Yes/No	Yes/No	

4. Other Equipment Response: (Continued)

	Taken to Manual Anytime	Performance Acceptable	Remarks
Loop "B" FW Demand	Yes/No	Yes/No	
"A" Feed Pump	Yes/No	Yes/No	
"B" Feed Pump	Yes/No	Yes/No	
"A" Main Feed Valve	Yes/No	Yes/No	
"B" Main Feed Valve	Yes/No	Yes/No	
"A" Startup Valve	Yes/No	Yes/No	
"B" Startup Valve	Yes/No	Yes/No	
"A" Turbine Bypasses	Yes/No	Yes/No	

4. Other Equipment Response: (Continued)

	Taken to Manual Anytime	Performance Acceptable	Remarks
"B" Turbine Bypasses	Yes/No	Yes/No	
Main Turbine	Yes/No	Yes/No	
EFIC	Yes/No	Yes/No	
Main FW Block Valves	N/A	Yes/No	
Condenser Vacuum	N/A	Yes/No	

5. Transient Reactor Coolant System Bounding Values:

NOTE:
If pre-trip value, signify with an asterisk (*).

RCS Parameter	Maximum	Minimum
RCS Temp (Max The, Min Tc)		
RCS Loop A Pressure (PSIG)		
RCS Loop B Pressure (PSIG)		
Pressurizer Level (INCHES)		
Observed Subcooling Margin (°F)		

6. SFA Initiation Information

If RCS pressure decrease below 1650 psig or RB pressure maximum is above 2 psig, complete this section.

SFAS Analog Channels	HPI Trip Lamp	LPI Trip Lamp
Channel A	bright/dim	bright/dim
Channel B	bright/dim	bright/dim
Channel C	bright/dim	bright/dim

SFAS Digital Channels	Analog A Trip Lamp	Analog B Trip Lamp	Analog C Trip Lamp	Channel Trip Lamps
1B-HPI	bright/dim	bright/dim	bright/dim	bright/dim
2B-LPI	bright/dim	bright/dim	bright/dim	bright/dim
1A-HPI	bright/dim	bright/dim	bright/dim	bright/dim
2A-LPI	bright/dim	bright/dim	bright/dim	bright/dim

If SFAS has occurred and then returned to normal, take a set of tank level readings per Casualty Procedure C.41, "Recovery From SFAS Actuation" Step 2.14. This will ensure no unintended flow paths have resulted during the recovery.

SS/Asst Review _____
Signature

7. Control Rod Breaker Assessment:

If the Bailey Computer "Sequence of Events" or the alarm typer printouts is irretrievable, explain why:

Not Applicable/As Follows (circle) _____

_____

RPS Channel Trip Time (From Bailey Computer Group 4)

Initial Trip Channel: Channel ____ Parameter _____ Time _____

Second Trip Channel: Channel ____ Parameter _____ Time _____

From Alarm Typer: CRD Trip Confirm (Z004): Time _____

7. Control Rod Breaker Assessment: (Continued)

NOTE:
Acceptance criterion is: not more than 2 seconds difference. The Bailey Computer's design can allow an indicated two second difference for simultaneous events.

Control Rod Breaker Opening Time: Subtract Time _____ second _____ Second Trip Channel (Sequence of Events preferred) From Trip Confirm (Alarm Printer)

CRD Breaker (local)

A-AC Breaker Indicates Trip Yes/No

B-AC Breaker Indicates Trip Yes/No

C-DC Breakers (CB1 and CB2) Both Indicate Trip Yes/No

D-DC Breakers (CB3 and CB4) Both Indicate Trip Yes/No

Logic Cabinet Ammeters All Read Zero (Contractors E,F) Yes/No

8. Transient Secondary Plant Bounding Values:

Lowest OTSG Startup Range Levels (Observed - not from charts or computer)

OTSG A: _____ OTSG B: _____

Lowest OTSG Pressures (Observed - not from charts or computer)

OTSG A: _____ OTSG B: _____

Worst Condenser Vacuums Observed

HP: _____ LP: _____

REMARKS: _____

_____

_____

_____

_____

ENCLOSURE 8.1 (Continued)
TRIP DATA

8. List Equipment Damaged During the Transient:

_____

_____

_____

9. REMARKS: Work Request No. _____ completed to replace temperature recording stickers on Secondary Safety Valves and Atmospheric Dump Valves.

_____

_____

_____

10. Required Computer Printouts: Attached

10→← 1. Bailey:

Alarm Printout	-- Alarm Printer(Automatic)	_____
Alarm Summary	-- Function 13, Group 1	_____
Memory Trip Review	-- Function 13, Group 3	_____
Sequence of Events	-- Function 13, Group 4	_____
Contact Status Summary	-- Function 13, Group 5	_____
Bad Input Summary	-- Function 13, Group 7	_____
Deleted Point Summary	-- Function 13, Group 8	_____
Deleted Monitor Summary	-- Function 13, Group 9	_____
Long Term Data Collection	-- OP A.75, Attachment 4.3	_____

10→← 2. IDADS: Alarm Printout -- Alarm Printer(Automatic)_____

11. Strip Charts Retrieved (Circle)

NOTE:
Retrieving all before startup is not required.
Trip Report writer to retrieve the balance.

XR-00403	Percent FP	PR-21092	RCS Press WR
XR-00205	Log N	LR-21503	Przr Lvl
TR-21023	T_c	PR-20543	Hdr Press
FR-21027	RC Flow	FR-30119	Stm Flow
TR-21031	The	FR-20535	FW Flow A
TR-21025	Tave	FR-20536	FW Flow B
PR-21037	RCS Press A	LR-20503	SG A Lvl
PR-21038	RCS Press B	LR-20504	SG B Lvl
		XR-30504	Turbine

13. Cooldown Rate curves initiated (attach photocopy if so) YES / NO

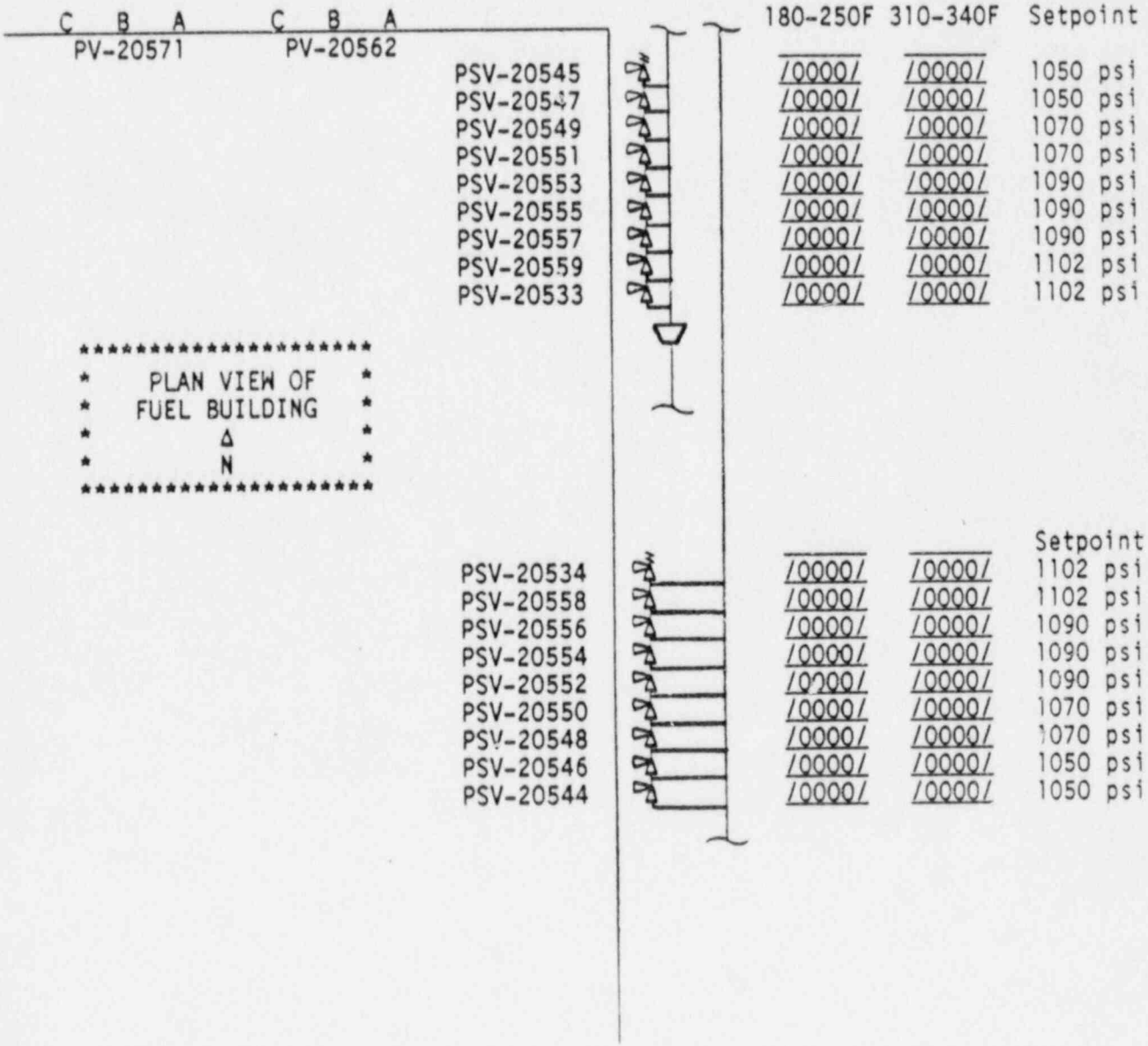
Completed By _____ date

ENCLOSURE 8.2
SECONDARY SAFETY AND DUMP VALVES
TEMPERATURE STICKERS DATA SHEET
("X out" Heat-blackened dots)
(Responsibility: Operations Department)

	PV-20571		PV-20562	
A	/0000/	/0000/	/0000/	/0000/
B	/0000/	/0000/	/0000/	/0000/
C	/0000/	/0000/	/0000/	/0000/

SECONDARY SAFETIES

ATMOSPHERIC DUMP VALVES



	180-250F	310-340F	Setpoint
PSV-20545	/0000/	/0000/	1050 psi
PSV-20547	/0000/	/0000/	1050 psi
PSV-20549	/0000/	/0000/	1070 psi
PSV-20551	/0000/	/0000/	1070 psi
PSV-20553	/0000/	/0000/	1090 psi
PSV-20555	/0000/	/0000/	1090 psi
PSV-20557	/0000/	/0000/	1090 psi
PSV-20559	/0000/	/0000/	1102 psi
PSV-20533	/0000/	/0000/	1102 psi

	180-250F	310-340F	Setpoint
PSV-20534	/0000/	/0000/	1102 psi
PSV-20558	/0000/	/0000/	1102 psi
PSV-20556	/0000/	/0000/	1090 psi
PSV-20554	/0000/	/0000/	1090 psi
PSV-20552	/0000/	/0000/	1090 psi
PSV-20550	/0000/	/0000/	1070 psi
PSV-20548	/0000/	/0000/	1070 psi
PSV-20546	/0000/	/0000/	1050 psi
PSV-20544	/0000/	/0000/	1050 psi

ENCLOSURE 8.3

PLANT PERSONNEL STATEMENTS (Responsibility: Trip Witness)

10- The purpose of this statement is to record pertinent information as seen by you during a transient condition. Read and initial those statements of the individuals that were near your location. If there are conflicts, provide more detail of what you saw on plain paper attached to your own statement.

Name/Title_____ Location _____

1. What were initial plant conditions? (Include ICS mode and pertinent testing, operations, or maintenance in progress or recently completed.)

_____

_____

_____

_____

2. What was the first indication or alarm which keyed you to a problem? What actions did you take as a result of these indications?

_____

_____

_____

_____

_____

_____

3. Were any alarms or indications out of service or did any fail during the course of the transient? Did any indications or alarms mislead you? Could the control room alarms or controls have been relocated in such a manner to have aided your actions on this transient?

_____

_____

_____

_____

_____

_____

4. Did existing Plant Procedures provide adequate action for this transient? Was it necessary to take action beyond their scope?

5. What additional information or guidance did you feel would have assisted you during the transient? What are your recommendation to prevent recurrence?

6. Summarize the transient including both indications and manual actions. Discuss any equipment problems observed.

ENCLOSURE 8.4

ANALYSIS AND EVALUATIONS (Responsibility: Operations)

PROBABLE CAUSE OF TRIP _____

_____

_____

_____

Comments: _____

_____

_____

_____

UNEXPECTED ASPECT OF TRANSIENT BEHAVIOR
(if event compared with previous similar transient, note the transient with which compared)

Compared With

Previous trip on _____ / _____
Date Time

FSAR Transient page number _____

_____

_____

_____

_____

_____

_____

IDENTIFICATION OF SYSTEMS WITH INADEQUATE PERFORMANCE

System/Component Description of Problem

_____

_____

_____

_____

_____

_____

Initials

Reviewer_____

Approval_____

ENCLOSURE 8.4 (Continued)
ANALYSIS AND EVALUATIONS

Performed By Name Date / Time

Signature_____

Reviewed By Name Date / Time

Signature_____

ENCLOSURE 8.5

TRIP CLASSIFICATION AND STARTUP APPROVAL (Responsibility: Operations)

TYPE I SCREENING CRITERIA (Circle)

10→	(a)	RCS Pressure Remained Above 1700 psig	Yes	No
	(b)	RCS Pressure Remained Below 2400 psig	Yes	No
←	(c)	RCS Temp Response Ranged Between 540°F and 560°F (Forced Circulation) or 540°F and 585°F (Natural Circulation)	Yes	No
	(d)	Reactor Coolant Was Contained Within The Primary RCS and PRT	Yes	No
10→	(e)	Indicated Pressurizer level remained above 10" without using HPI beyond the "B" pump and the "A" valve, but below 275".*	Yes	No
←	(f)	Indicated SG Level Remained Between 18" and 60" startup (forced circulation) or Between 18" and 60% (natural circulation)	Yes	No
	(g)	RPS Channels Did Not Fail to trip Properly	Yes	No
10→	(h)	On RPS Trip, All CRD Breakers Tripped and the Reactor tripped within two seconds of demand (Enclosure 8.1) and	Yes	No
←		all control rods inserted.	Yes	No
	(i)	Adequate Subcooling Margin Existed	Yes	No
	(j)	Post-trip, the Electrical Distribution System Functioned properly	Yes	No
10→	(k)	The Post-trip Steam Generator Pressure Response Ranges Between 925 and 1115 psig.		
←	(l)	Enclosure 8.4 documents the reasons that the event is not Type II event.	Yes	No

* If Pressurizer Code Safety(ies) lifted, concurrent with Pressurizer level at or above 275", take plant to depressurized cold shutdown (Commitment 2.2.2).

Comments: _____

_____

_____

Initials

Shift Supervisor _____

OTA _____

ENCLOSURE 8.5 (Continued)
TRIP CLASSIFICATION AND STARTUP APPROVAL

Classify trip as Type I or II according to definition in procedure.

The event on _____ at ____:____ is a type _____
Date Time I, II

10→ Use this space for signature(s) of other Shift Management on duty.

_____ _____ / _____
Shift Supervisor Date Time

_____ _____ / _____
Assistant Shift Supervisor Date Time

_____ _____ / _____
Assistant Shift Supervisor Date Time

_____ _____ / _____
← OTA Date Time

Notification

10→← Director, Operations and Maintenance, or designee, notified of Type classification

_____ / _____
Date Time

Remarks:

_____

_____

_____

_____

_____

PERMISSION TO START UP

10→← Director, Operations and Maintenance, notified and permission granted to start up the reactor.

_____ _____ / _____
Shift Supervisor Date Time

_____ _____ / _____
Duty OTA Date Time

10→ _____ _____ / _____
← DOM or Designee (Can Follow S/U) Date Time Signed

ENCLOSURE 8.6

TRIP REPORT AMENDMENTS AND APPROVAL (Responsiblity: PRC and DOM)

Prepared By _____ _____
Date

PRC Amendments and Remarks: _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

PRC review of event on _____, meeting number _____

Minutes of the meeting(s) are attached

_____ _____
PRC Chairman Date

Director, Operations and Maintenance, Remarks: _____

_____

_____

_____

_____

_____

Approved _____ _____
Director, Operations and Maintenance Date

ENCLOSURE 8.7

TYPICAL TAP REPORT FORMAT

NOTE: This is not a requirement, but a format seen in many TAP Reports. A TAP Team typically writes draft Reports to this format.

I. Executive Summary

This section should include a short description of the event.

A. Plant Data - An identifier of the plant, transient and date of occurrence.

B. Description - Short review of transient.

C. Root Cause - A short description of the root cause of the event.

D. Performance Anomalies - a listing of the various post transient events that were departures from the expected.

II. Transient Assessment

A. Sequence of Events - This section should contain those major events or conditions, which delineate the progressive course of the transient. This is usually a composite of the IDADS and Bailey Computer alarm typers, strip charts, IDADS history, Bailey Computer Trip functions, and control room operator and management logs.

B. Plant Response

1. Pre-Trip Review - This section should contain a statement of the plant conditions prior to the transient. Such information as power level, ICS status, maintenance or testing in progress and equipment deficiencies may be supplied here. Additionally, this section should provide the framework for evaluating the initiating event and root cause of the transient.

2. Initiating Event - This section should be included in the report when a transient is initiated by a complex series of events such that detailed analysis is required to delineate the occurrences.

3. Plant Post-Trip Response - This section should include a discussion of the response of the NSS and BOP from a process point of view, i.e., Tave, RC Pressure, Pressurizer Level, Feedwater Flow, OTSG level, and Main Steam Pressure. These parameters should be plotted versus time and annotated to indicate major events, departures, etc. to support the text of this section. Also, this section should include a discussion of performance of components and their departures from the expected.

4. Operator Actions/Procedural Adequacy - This section should include information concerning specific operator actions taken during the transient which have not been included in any previous sections. Additionally, procedures followed during the transient, and any information which would be beneficial to other operators should be included. This section could be used for input into procedure revisions.

C. Safety Considerations - This section should include the bases for which safety, as it relates to the transient has been considered. Those basis might include plant design requirements, FSAR accident analysis, or other information.

D. Assessment Conclusions & Corrective Actions - This section should be a summary of the significant aspects of the transient, including departures from expected component and plant performance. Proposed corrective actions and corrective actions previously completed may be included in the text of this section.

END