

Dept. Supv.	<i>J. J. ...</i>	Proc. No.	A.P. 0154
PORC	<i>J. C. ...</i>	Rev. No.	Original
Plant Mgr.	<i>J. ...</i>	Issue Date	4/30/84
Mgr. of Ops.	<i>D. P. Murphy</i>	Review Date	4/30/86

POST TRIP REVIEW

Purpose:

The purpose of the post-trip review process is to determine the plant's readiness to return to power operation following an unscheduled reactor trip from other than shutdown or refueling modes of operation. Prior to returning to power operation, station personnel must reasonably determine the cause of the trip, verify the proper functioning of safety-related and other important equipment during the trip and ensure the trip did not have a detrimental effect on the plant. Also, the availability of Tech. Spec. and safety-related equipment is to be considered prior to startup.

Discussion:

The overall objective of the post-trip review is to assist in determining the acceptability of performing a reactor restart.

Any unscheduled reactor trip, except when initiated during refueling operations, will require a post-trip review process to be initiated. The post-trip review shall be initiated after plant conditions have stabilized and shall not distract the Shift Supervisor, operating personnel, or the Shift Engineer from their primary responsibility of monitoring plant parameters and maintaining the plant in a safe condition.

The duty Shift Supervisor has the overall responsibility for the safe and reliable operation of the plant during his shift. Therefore, he is responsible for the thoroughness and completeness of the post-trip review.

Sufficient data must be collected to perform a complete investigation. The trip data should be collected as soon as feasible after the trip. An important aspect of the data collection is the Operator observations during the trip. Personnel observing or participating in the trip can provide insights into the plant response not available from strip charts or computer printouts. Various methods are available to obtain the Operator input. Written Operator statements, Operator interviews, or a meeting with all involved personnel are effective methods of obtaining Operator input. Pertinent hard copy data is to be collected and attached to the post-trip report (strip charts and computer printouts.)

The basis for the review should be a comparison with similar transients described in the FSAR or previous trip reports and the Technical Specifications to determine if the plant equipment functioned within design specifications. This documented review should help ensure events that may have had an impact on the cause of the trip and subsequent equipment response are identified and thoroughly understood. The review results will permit a determination to be made as to the readiness of the plant to safely return to power operation. The post-trip review will result in a recommendation for either a reactor restart or further investigation. The trip event should be reconstructed, analyzed and evaluated to determine the most

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probable cause of the trip, the proper functioning of safety-related and other equipment and any detrimental effects of the trip on the plant.

The responsibility for the restart decision rests with the Plant Manager (or his designate). He will evaluate input from the individuals performing the trip review. The Plant Manager (or his designate) will satisfy himself that the cause of the trip has been reasonably determined and actions have been taken to minimize the possibility of recurrence.

References:

- A. Tech. Specs.
  - 1. None
- B. Admin. Limits
  - 1. None
- C. Other
  - 1. A.P. 0010, Occurrence Reports
  - 2. A.P. 0012, Notifications and Reports Due
  - 3. A.P. 0156, Significant Events Requiring Immediate Notification
  - 4. A.P. 3125, Emergency Plan Classification and Action Level Scheme
  - 5. A.P. 0834, Plant Record Retention
  - 6. Generic Ltr 83-28, Salem ATWS Events

Procedure:

- A. Post-Trip Investigation
  - 1. Data Collection
    - a. As soon as practical after plant conditions have stabilized, the Shift Engineer and any available Operators shall begin gathering event data. This will include, but not necessarily be limited to:
      - 1) Alarm/sequence of events typer output
      - 2) On-demand typer output
      - 3) BOP typer output
      - 4) Core performance log typer output
      - 5) Useful recorded tracings of Control Room instruments
      - 6) Observations from plant personnel involved
  - 2. Event Reconstruction
    - a. The Shift Supervisor (or SRO designate) and the Shift Engineer will reconstruct the transient using the collected data. A chronological description of the event will be developed using available data.

3. Analysis and Evaluation

- a. The Shift Supervisor (or SRO designate) and the Shift Engineer shall analyze and evaluate the event reconstruction, using VYAPF 0154.01, to determine the cause of the trip and the following:
- 1) If all major safety-related and other important equipment involved in the trip operated as anticipated or expected.
  - 2) If the trip/transient caused any detrimental effects on plant equipment.
  - 3) If it is acceptable to restart the reactor.
- b. The review shall look beyond the obvious indications to diagnose the cause of the trip and evaluate the plant response. Review the available indications thoroughly, looking 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.
- c. It is important to understand the cause of an unscheduled trip so that a recurrence can be avoided after restart. It is not realistic however, to ignore the possibility for spurious trips whose cause cannot be identified. In the event that the cause of the trip cannot be determined, and the safety systems have indicated a proper response, a restart can be recommended based on the following conditions:
- 1) Any further reasonable actions to determine cause are considered.
  - 2) No physical damage was done by the event and a determination was made that the plant had not operated beyond the boundaries established by approved plant safety and transient analysis.
  - 3) Any reasonable action to gain additional information has been considered.
  - 4) Satisfied of a reasonably low potential for recurrence.

NOTE:

If the duty Shift Supervisor did not actually perform the trip investigation, he shall review and approve the post-trip report.

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4. Review

- a. The completed "Post-Trip Report" should be forwarded to the Operations Supervisor for review.

B. Investigation Review

1. Higher plant management shall be notified of the results of this investigation to assist in the restart decision. The following criteria shall be used for the restart decision:
  - a. The cause of the trip has been determined and corrected.
  - b. Major safety-related and other important equipment functioned properly or corrective maintenance and satisfactory testing have been performed on such.
  - c. The plant responded as anticipated or abnormalities are understood and corrected as per the Technical Specifications.

NOTE:

Higher management notification and restart decision may be verbal over the telephone.

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2. If the criteria of B.1 above are not met, then further review shall be conducted by a "Post-Trip Committee" consisting of the Operations Superintendent and the Operations Supervisor (or their designates as a minimum). The Operations Superintendent will solicit other department and individual participation in the Committee as needed. This Committee should analyze the event reconstruction, emphasizing the determination of the cause of the trip and resolution of abnormal or degraded conditions. The Committee should consider (but not be limited to) the following:
  - a. The actual or most probable cause of the trip.
  - b. The maintenance and testing necessary before reactor restart, including additional measures to verify the most probable cause.
  - c. Additional monitoring or trending required during and/or after reactor restart.

- d. Necessary briefings to Operations and station personnel concerning specific equipment indications or possible malfunctions.
  - e. The conditions necessary for a reactor restart.
3. The end result of either review process outlined above should be a recommendation to the Plant Manager to assist in his decision to restart the reactor.
  4. The Plant Operations Review Committee (PORC) should review all post-trip reports at their next scheduled meeting.

POST-TRIP REPORT

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Report No.: \_\_\_\_\_

PERSONNEL

Duty Shift Supervisor: \_\_\_\_\_

Duty SCRO: \_\_\_\_\_

Duty CRO: \_\_\_\_\_

Duty ACRO: \_\_\_\_\_

Duty Shift Engineer: \_\_\_\_\_

Others Involved: \_\_\_\_\_

INITIAL CONDITIONS:

Reactor Power (Mwt) \_\_\_\_\_

Rx Vessel Press (psig) \_\_\_\_\_

Vessel Level (in) \_\_\_\_\_

Status of Control Stations: Recirc Pump Control: \_\_\_\_\_

Vessel Level Control: \_\_\_\_\_

Turbine Control: \_\_\_\_\_

Off-normal status of any portions of safety systems prior to trip: \_\_\_\_\_

Testing/Surveillance in Progress: \_\_\_\_\_

Other significant initial conditions: \_\_\_\_\_

SEQUENCE OF EVENTS

Plant Evolutions Preceding Scram:

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Cause(s) of Scram:

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Event Reconstruction:

Time:

Event Description:

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Event Reconstruction (Cont.)

Time:

Event Description:

A series of horizontal lines for recording event details, including time and event descriptions.

(Attach Additional Sheets as Required)



PLANT RESPONSE

-Evaluate if useful information is contained on any strip recorders and retain as necessary (attach to report).

-Computer edits are to be retained (attach to report).

System Responses:

1. Emergency Diesel Generators

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2. Turbine and Auxiliaries

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3. CRD System (include monitored scram times)

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4. Reactor Protection System

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5. ECCS Systems (HPCI, CS, LPCI, ADS, RCIC)

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6. Safety Valves and/or Relief Valves

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POST-TRIP REPORT

Summary:

Systems/components with inadequate performance:

System/component

Description of problem

Comments:

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Signature indicates agreement with report contents:

Reviewed by: \_\_\_\_\_  
Shift Supervisor Date Time

Reviewed by: \_\_\_\_\_  
Shift Engineer Date Time

Reviewed by: \_\_\_\_\_  
OPS Supervisor Date

Reviewed by: \_\_\_\_\_  
PORC Secretary Date

Any subsequent findings or additional information, including Review Committee recommendations or PORC Review Minutes, should be attached to report for future reference.