

SOUTH CAROLINA ELECTRIC & GAS COMPANY
 VIRGIL C. SUMMER NUCLEAR STATION
 NUCLEAR OPERATIONS

EMERGENCY OPERATING PROCEDURE

EOP-12.0

MONITORING OF CRITICAL SAFETY FUNCTIONS

REVISION 6

SAFETY RELATED

Richard Kalbach
 DISCIPLINE SUPERVISOR

7-10-90
 DATE

Gay Dwyer
 APPROVAL AUTHORITY

8-9-80
 DATE

RECORD OF CHANGES

CHANGE NO.	TYPE CHANGE	EFFECTIVE DATE	DATE CANCELLED	CHANGE NO.	TYPE CHANGE	EFFECTIVE DATE	DATE CANCELLED

9012270285 901218
 PDR ADOCK 05000395
 P PDR

Next Two Year Review required no later than 8-8-92
 (Date)

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REVISION 6

SAFETY RELATED

Richard Kurlbach
 DISCIPLINE SUPERVISOR

8-6-90
 DATE

Gary Taylor
 APPROVAL AUTHORITY

8-8-90
 DATE

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MONITORING OF CRITICAL SAFETY FUNCTIONS

PURPOSE

This procedure provides instructions for monitoring Critical Safety Functions during an emergency situation. By continuously maintaining the Critical Safety Functions satisfied, the integrity of the fuel matrix, the fuel clad, the RCS pressure boundary and the Containment is assured, thus minimizing the possibility of radiation releases.

This procedure also provides a direct interface between monitoring of conditions within the station and the emergency classification of the event which is accomplished in EPP-001, ACTIVATION AND IMPLEMENTATION OF EMERGENCY PLAN.

Instructions are given for monitoring Critical Safety Functions using the Status Trees attached to this procedure with the Integrated Plant Computer System or with Main Control Board indications. IF the monitoring process indicates that a Critical Safety Function is NOT satisfied, THEN the appropriate procedure is referenced from the Status Tree.

The Critical Safety Function Status Trees in order of priority are:

SUBCRITICALITY

CORE COOLING

HEAT SINK

INTEGRITY

CONTAINMENT

INVENTORY

ENTRY CONDITIONS

1. This procedure is monitored for information only during the performance of EOP-6.0, LOSS OF ALL ESF AC POWER.
2. This procedure is entered from:
 - EOP-1.0, REACTOR TRIP/SAFETY INJECTION ACTUATION.
 - EOP-6.1, LOSS OF ALL ESF AC POWER RECOVERY WITHOUT SI REQUIRED.
 - EOP-6.2, LOSS OF ALL ESF AC POWER RECOVERY WITH SI REQUIRED.
 - Any time a transition is made from EOP-1.0, REACTOR TRIP/SAFETY INJECTION ACTUATION to any other EOP.

MONITORING OF CRITICAL SAFETY FUNCTIONS

ACTION/EXPECTED RESPONSE	ALTERNATIVE ACTION
<u>OPERATOR ACTIONS</u>	
<u>NOTE</u> <ul style="list-style-type: none">• The monitoring of Critical Safety Functions begins after any transition from EOP-1.0, REACTOR TRIP/SAFETY INJECTION ACTUATION, to any other Emergency Operating Procedure.• The results of Critical Safety Function monitoring will be circled on Attachment 7 and given to the Control Room Supervisor.	
<u>NOTE - Step 1</u> <p>Critical Safety Function Attachments are arranged in order of priority.</p>	
<p>1 Determine the status of the Critical Safety Functions:</p> <p>a. Press F1 on the Integrated Plant Computer System to display Critical Safety Functions. <input type="checkbox"/></p> <p>b. Press the appropriate Function Key to display the page for <u>any</u> Critical Safety Function which is not GREEN. <input type="checkbox"/></p> <p>c. Progress through the Status Tree until a branch end is reached. <input type="checkbox"/></p> <p>(Step 1 continued on next page)</p>	<p>a. Monitor Critical Safety Functions using Main Control Board indications. REFER TO Attachments 1 through 6. <input type="checkbox"/></p> <p>GO TO Step 1.c. <input type="checkbox"/></p> <p>(Step 1 continued on next page)</p>

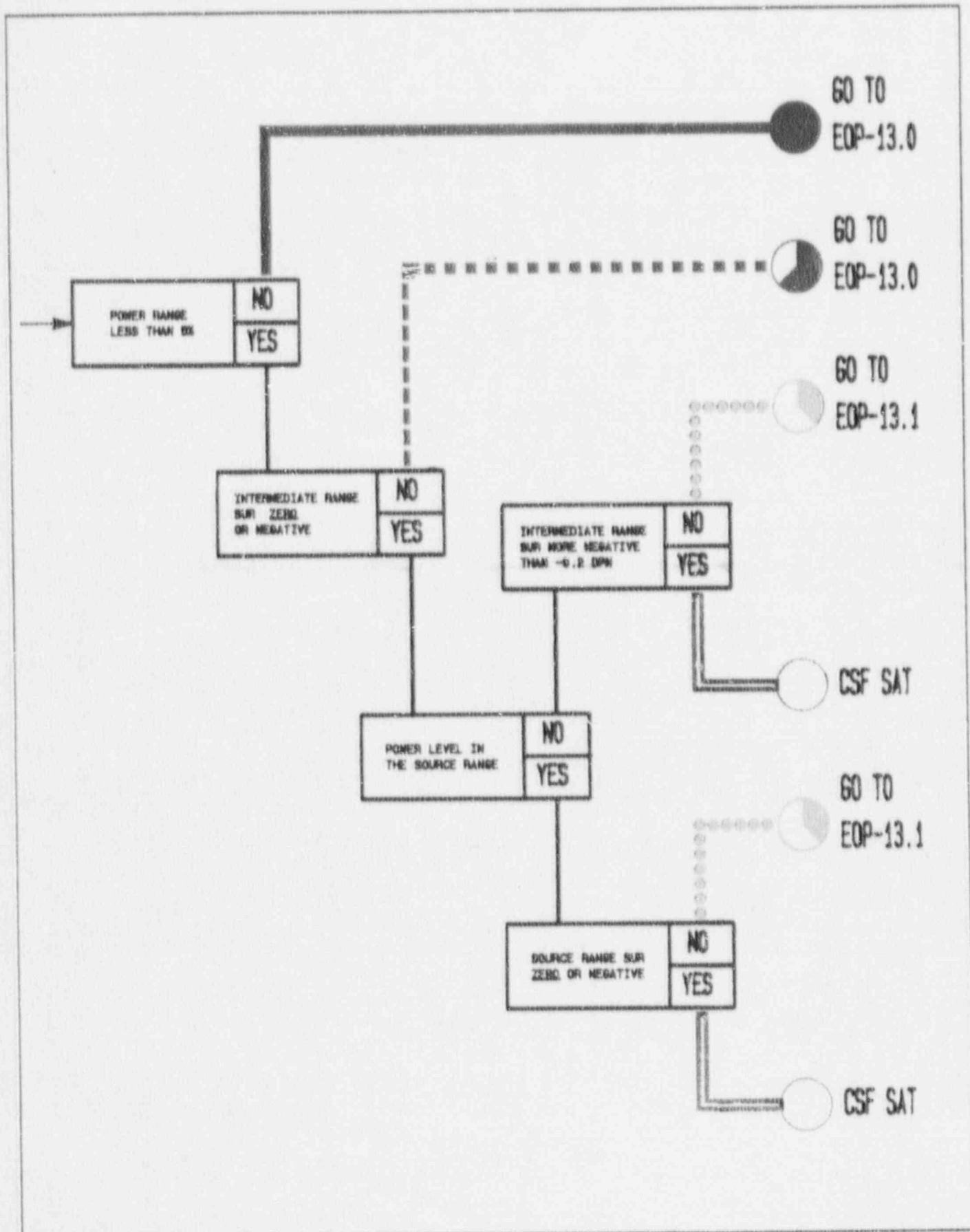
MONITORING OF CRITICAL SAFETY FUNCTIONS

ACTION/EXPECTED RESPONSE	ALTERNATIVE ACTION
<p>(Step 1 continued)</p> <p>d. Examine the branch path:</p> <p>1) A RED path signifies the Critical Safety Function is extremely challenged:</p> <p>a) Verify a RED path exists. <input type="checkbox"/></p> <p>b) Notify the Control Room Supervisor to GO TO the Procedure referenced at the end of the highest priority RED path. <input type="checkbox"/></p> <p>c) REFER TO EPP-001, ACTIVATION AND IMPLEMENTATION OF EMERGENCY PLAN, to classify the event. <input type="checkbox"/></p> <p>d) Inform the Shift Supervisor of <u>any</u> RED path indications. <input type="checkbox"/></p> <p>2) An ORANGE path signifies the Critical Safety Function is severely challenged:</p> <p>a) Complete monitoring of the remaining Status Trees to identify <u>any</u> RED paths. <input type="checkbox"/></p> <p>b) Verify <u>no</u> RED paths exist. <input type="checkbox"/></p> <p>c) Verify an ORANGE path exists. <input type="checkbox"/></p> <p>d) Notify the Control Room Supervisor to GO TO the Procedure referenced at the end of the highest priority ORANGE path. <input type="checkbox"/></p>	<p>(Step 1 continued)</p> <p>a) GO TO Step 1.d.2). <input type="checkbox"/></p> <p>b) RETURN TO Step 1.d.1). <input type="checkbox"/></p> <p>c) GO TO Step 1.d.3). <input type="checkbox"/></p>
<p>(Step 1 continued on next page)</p>	<p>(Step 1 continued on next page)</p>

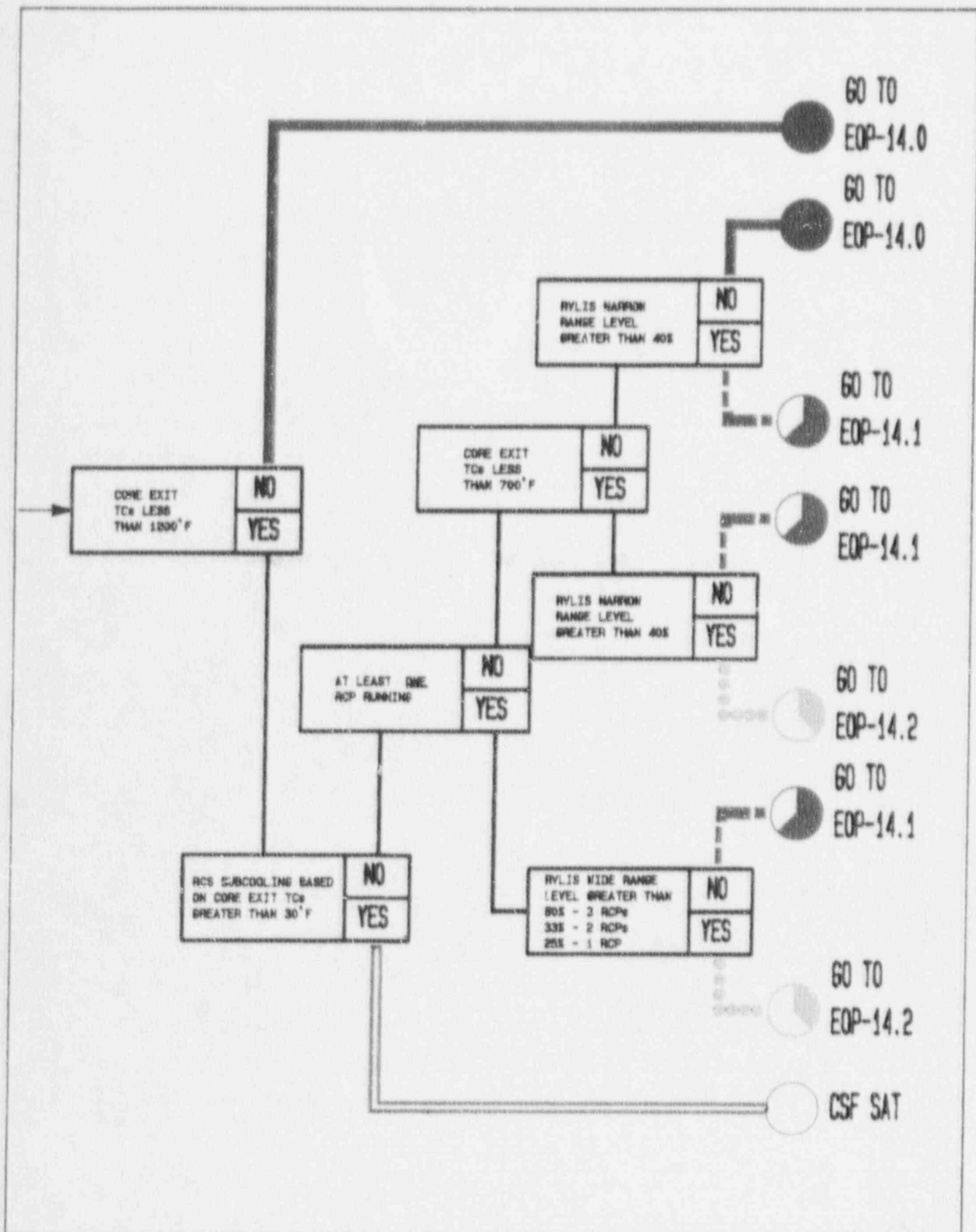
MONITORING OF CRITICAL SAFETY FUNCTIONS

ACTION/EXPECTED RESPONSE	ALTERNATIVE ACTION
<p>(Step 1 continued)</p> <p>3) A YELLOW path signifies the Critical Safety Function is <u>NOT</u> satisfied:</p> <p>a) Verify a YELLOW path exists. <input type="checkbox"/></p> <p>b) Notify the Control Room Supervisor to GO TO the Procedure referenced at the end of the highest priority YELLOW path at his discretion. <input type="checkbox"/></p>	<p>(Step 1 continued)</p> <p>a) GO TO Step 2. Observe the NOTE prior to Step 2. <input type="checkbox"/></p>
<p><u>NOTE - Step 2</u></p> <p>Critical Safety Function monitoring should continue if <u>either</u> the Reactor Protection System <u>OR</u> the Engineered Safeguards System is inoperable.</p>	
<p>2 Continue monitoring the Critical Safety Functions until normal conditions are restored <u>OR</u> the plant is in Cold Shutdown. <input type="checkbox"/></p>	
<p>----- End of EOP-12.0 -----</p>	

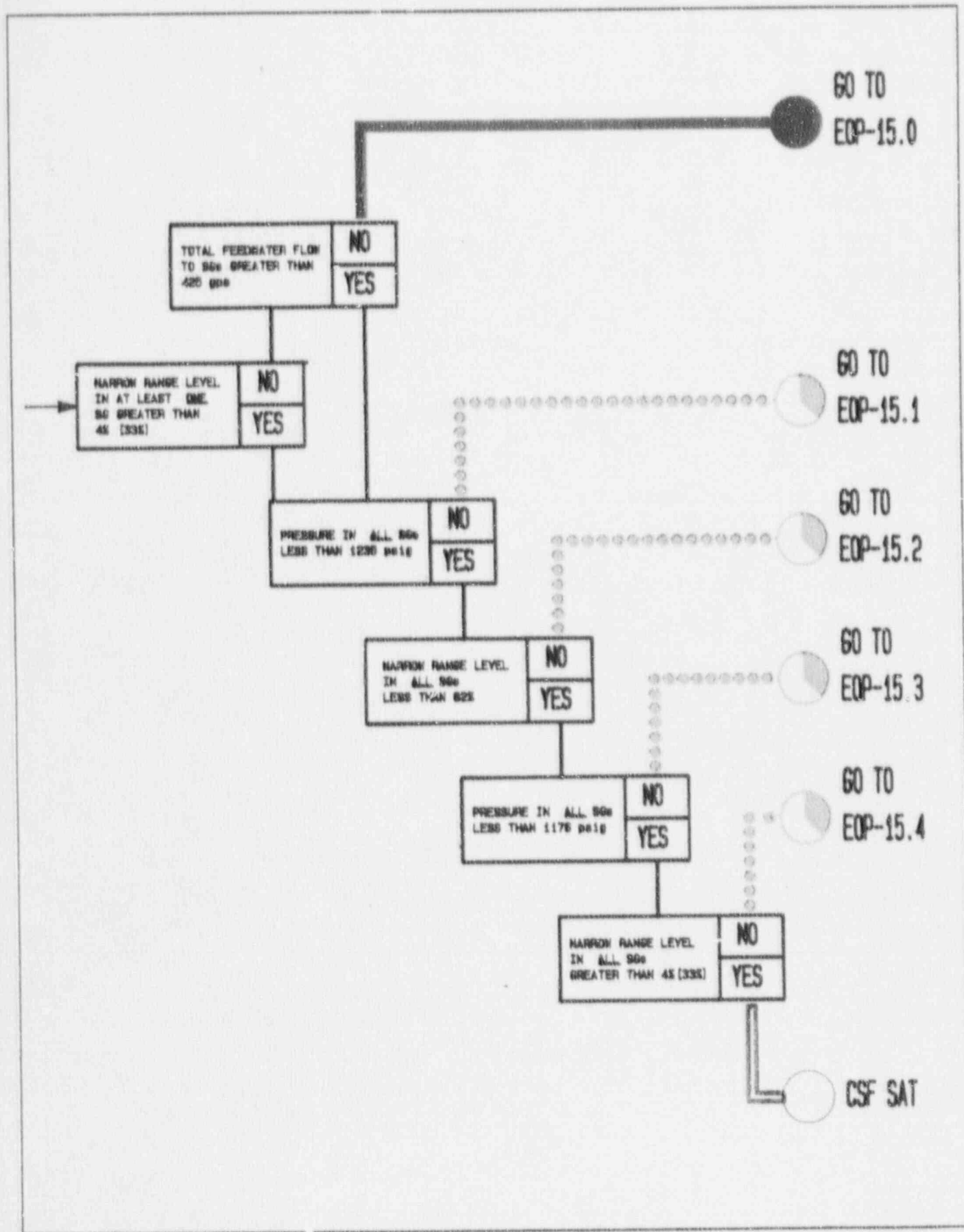
SUBCRITICALITY



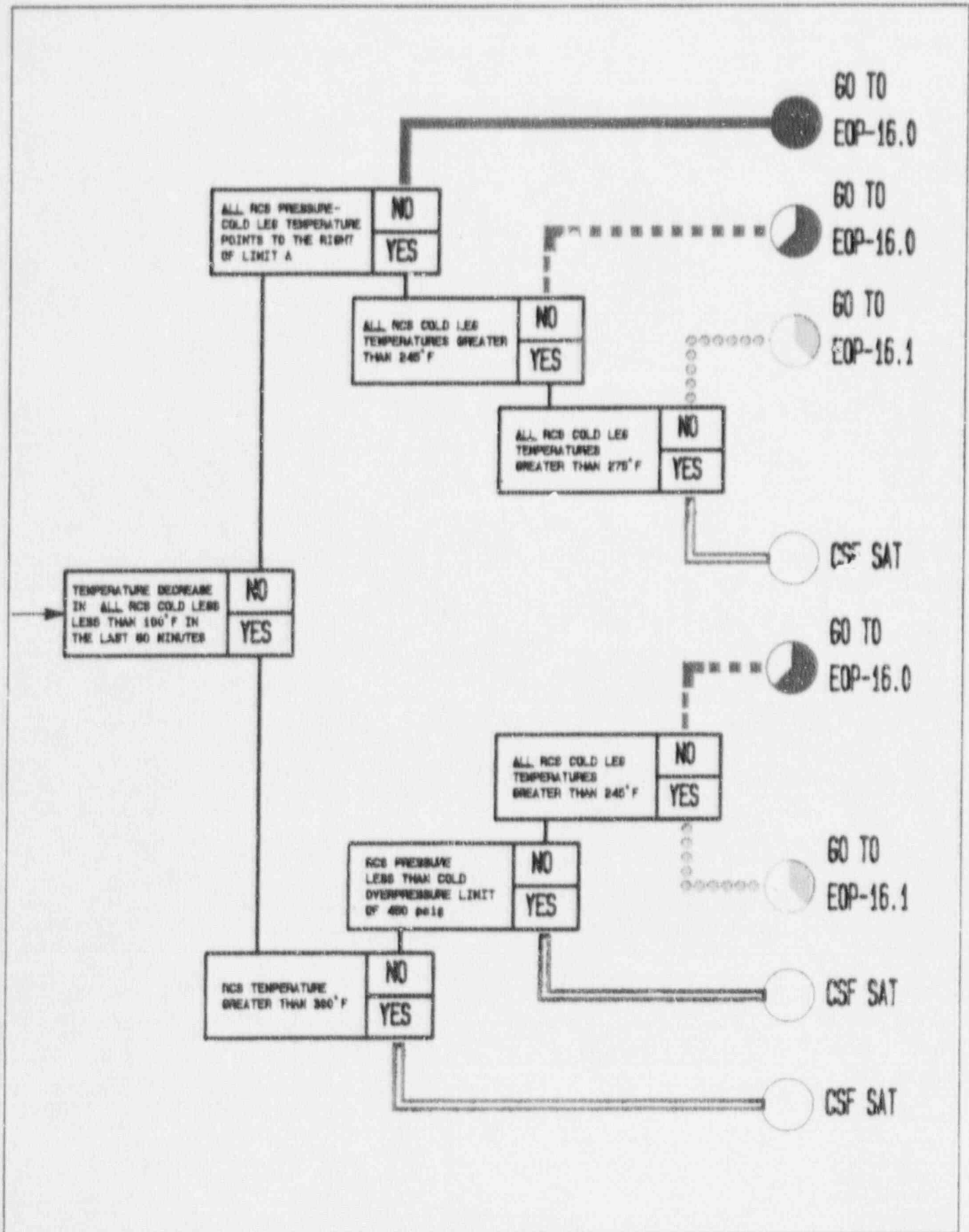
CORE COOLING



HEAT SINK

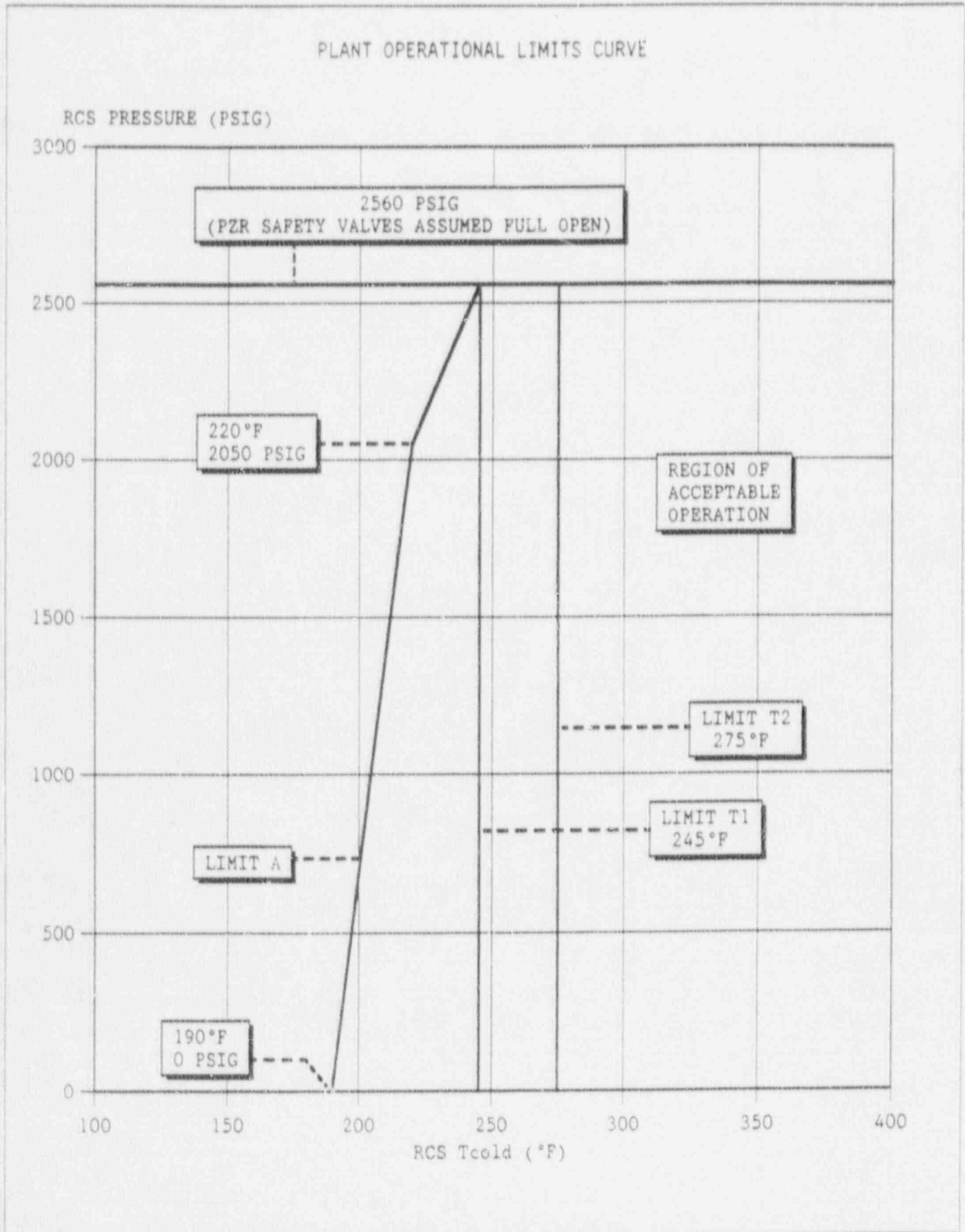


INTEGRITY

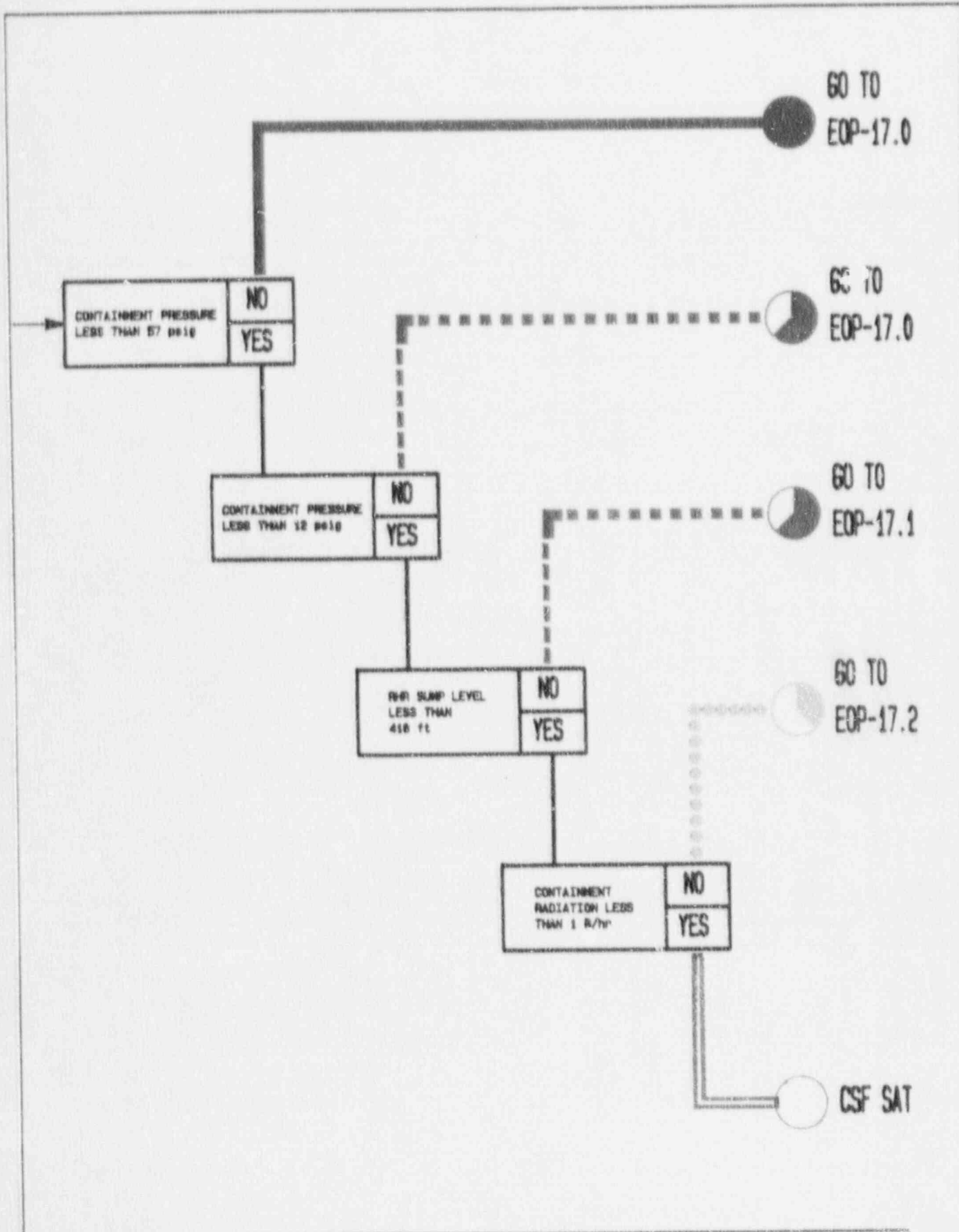


INTEGRITY

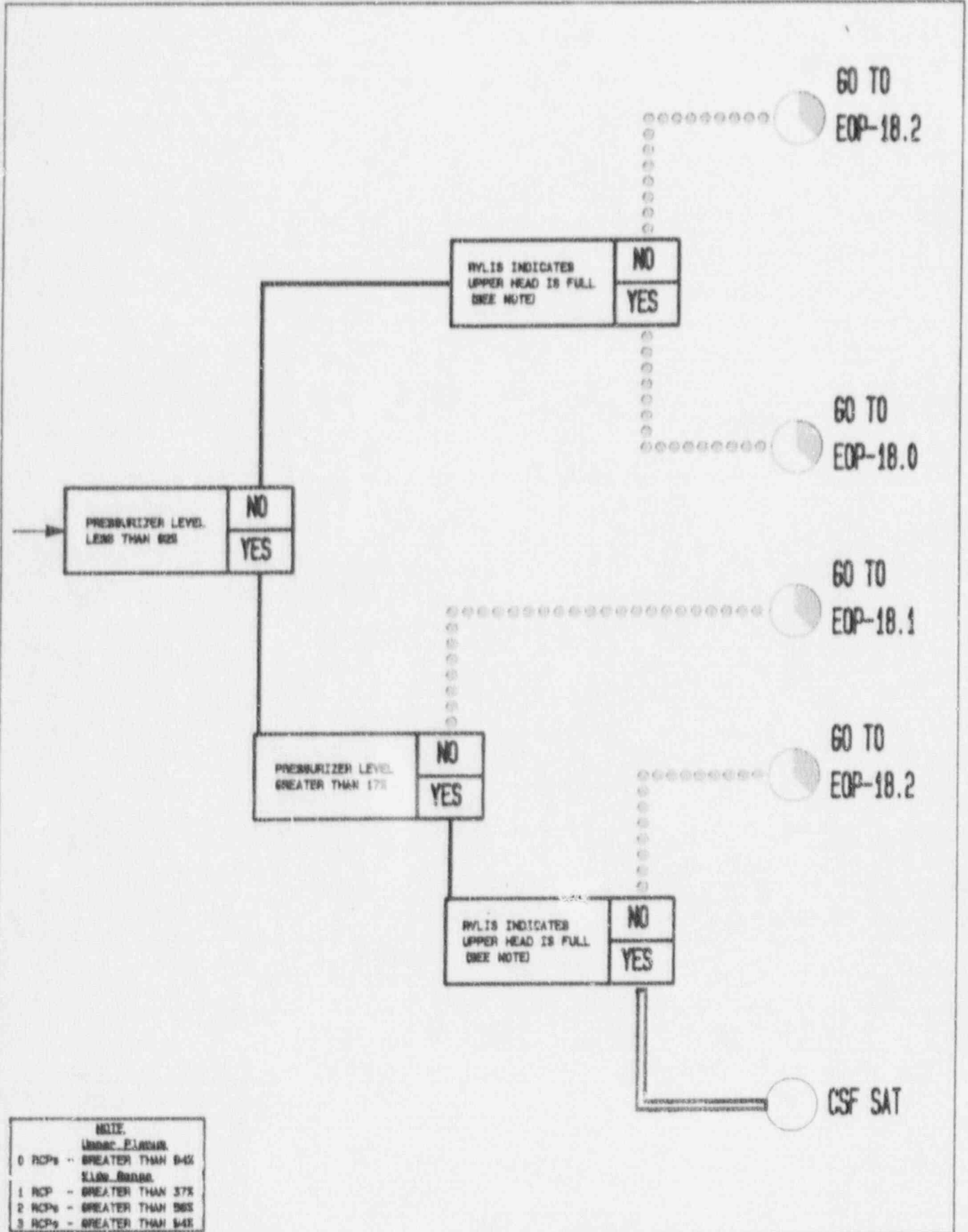
PLANT OPERATIONAL LIMITS CURVE



CONTAINMENT



INVENTORY



NOTE	
Upper Plane	
0 RCPs	- GREATER THAN 84%
1 RCP	- GREATER THAN 37%
2 RCPs	- GREATER THAN 86%
3 RCPs	- GREATER THAN 84%