# Southern California Edison Company

P. O. BOX 800 2244 WALNUT GROVE AVENUE ROSEMEAD. CALIFORNIA 91770

M.O. MEDFORD MANAGER, NUCLEAR LICENSING

November 28, 1983

Director, Office of Nuclear Reactor Regulation Attention: Mr. D. M. Crutchfield, Chief Operating Reactors Branch No. 5 Division of Licensing U. S. Nuclear Regulatory Commission Washington, D.C. 20555

Gentlemen:

Subject: Docket No. 50-206 Generic Letter 83-28: Required Actions Based on Generic Implications of Salem ATWS Events San Onofre Nuclear Generating Station Unit 1

The 120 day response requested by Generic Letter 83-28 is provided in the enclosure. This response identifies the status of conformance with Generic Letter 83-28 and provides plans and schedules for actions to be taken to achieve full conformance. The plans for actions to be taken are summarized below:

## Position 1.1: Post-Trip Review - Program Description and Procedure

The post-trip review program and procedure will be implemented and our full response will be provided to you prior to startup. This approach will allow San Onofre Unit 1 to take advantage of any experience and lessons learned from the currently established San Onofre Units 2 and 3 post-trip review program.

### Position 2.2.2: Vendor Interface Program - All Safety-Related Components

We are participating in a Nuclear Utility Task Action Committee (NUTAC) to develop a generic response to this issue. The NUTAC is currently scheduled to be completed in February 1984. We will review this NUTAC recommendation and provide you with our full response to this position within ninety days of completion of NUTAC activities.

## Positions 4.2 and 4.5: Reactor Trip System Reliability Improvements

We are participating in Westinghouse Owners Group programs to assure that our maintenance and testing programs provide acceptable reactor trip system reliability. For recommendations resulting from each program, we

8311300045 831128 PDR ADDCK 05000204

1055



TELEPHONE (213) 572-1749

## Mr. D. M. Crutchfield

will perform a review and provide you with a response within ninety days of the issuance of the recommendations. These responses will provide the status of our reviews and our plans and schedules for completing the reviews and our plans and schedules, if available, for actions to be taken as a result of our reviews. In the interim, the reactor trip breakers will continue to be maintained in accordance with the current maintenance program, which is based on the latest Westinghouse recommendations in accordance with IE Bulletin 83-01.

-2-

You will be advised if there is a need to revise the plans for achieving full compliance with Generic Letter 83-28 as discussed above. Please contact me if you have any questions or require additional information.

Subscribed on this  $\lambda g^{IH}$  day of <u>November</u>, 1983.

Respectfully submitted,

SOUTHERN CALIFORNIA EDISON COMPANY

By: M. O. Medford

Manager, Nuclear Licensing

Subscribed and sworn to before me this 28th day of November 1983.

mes liabtre Notary Public in and for the County of

Los Angeles, State of California

My Commission Expires: dug 27, 1986

Enclosure

cc: Document Control Desk (10 copies) Walt Paulson, NRC Project Manager



Enclosure

# GENERIC LETTER 83-28

# REQUIRED ACTIONS BASED ON GENERIC IMPLICATIONS OF SALEM ATWS EVENTS

# 120 DAY RESPONSE

# STATUS OF CONFORMANCE

# SAN ONOFRE NUCLEAR GENERATING STATION

# UNIT 1

## 1.1 POST-TRIP REVIEW (PROGRAM DESCRIPTION AND PROCEDURE)

## Position

Licensees and applicants shall describe their program for ensuring that unscheduled reactor shutdowns are analyzed and that a determination is made that the plant can be restarted safely. A report describing the program for review and analysis of such unscheduled reactor shutdowns should include, as a minimum:

- 1. The criteria for determining the acceptability of restart.
- 2. The responsibilities and authorities of personnel who will perform the review and analysis of these events.
- 3. The necessary qualifications and training for the responsible personnel.
- 4. The sources of plant information necessary to conduct the review and analysis. The sources of information should include the measures and equipment that provide the necessary detail and type of information to reconstruct the event accurately and in sufficient detail for proper understanding. (See Action 1.2)
- 5. The methods and criteria for comparing the event information with known or expected plant behavior (e.g., that safety-related equipment operates as required by the Technical Specifications or other performance specifications related to the safety function).
- 6. The criteria for determining the need for independent assessment of an event (e.g., a case in which the cause of the event cannot be positively identified, a competent group such as the Plant Operations Review Committee, will be consulted prior to authorizing restart) and guidelines on the preservation of physical evidence (both hardware and software) to support independent analysis of the event.
- 7. Items 1 through 6 above are considered to be the basis for the establishment of a systematic method to assess unscheduled reactor shutdowns. The systematic safety assessment procedures compiled from the above items, which are to be used in conducting the evaluation, should be in the report.

## Response

San Onofre Unit 1 Operating Instruction SO1-14-27, "Post-Trip Review," has been drafted and is currently being reviewed. This instruction will be finalized and implemented prior to startup, which will allow San Onofre Unit 1 to take full advantage of any experience and lessons learned from the currently established San Onofre Units 2 and 3 post-trip review program. Our full response to Position 1.1 will be provided to you prior to San Onofre Unit 1 startup.

## 1.2 POST-TRIP REVIEW - DATA AND INFORMATION CAPABILITY

### Position

Licensees and applicants shall have or have planned a capability to record, recall and display data and information to permit diagnosing the causes of unscheduled reactor shutdowns prior to restart and for ascertaining the proper functioning of safety-related equipment.

Adequate data and information shall be provided to correctly diagnose the cause of unscheduled reactor shutdowns and the proper functioning of safety-related equipment during these events using systematic safety assessment procedures (Action 1.1). The data and information shall be displayed in a form that permits ease of assimilation and analysis by persons trained in the use of systematic safety assessment procedures.

A report shall be prepared which describes and justifies the adequacy of equipment for diagnosing an unscheduled reactor shutdown. The report shall describe as a minimum:

- 1. Capability for assessing sequence of events (on-off indications)
  - Brief description of equipment (e.g., plant computer, dedicated computer, strip chart)

### Response

The primary source of information for assessing the sequence of events is the control room Events Recorder. This strip chart type recorder has forty monitoring channels. Thirty-eight channels monitor trip signals, one channel monitors the Events Recorder mode of operation and one channel is a spare. Each channel has a dedicated heated pen which traces a continuous line on a strip chart. When a trip signal reaches the Events Recorder, the recorder pen associated with the particular trip signal channel will offset from the normal tracing position. The resulting mark on the strip chart establishes the time of trip signal receipt. Also upon receipt of the trip signal, the Events Recorder automatically enters a high speed mode of operation in which the strip chart is advanced at 3600 times the normal speed for ten seconds. The high speed mode enhances the ability to assess the sequence of signals arriving subsequent to the first trip signal. High speed operation is initiated each time a trip signal is received by the Events Recorder while the Events Recorder is in the normal mode of operation (i.e., a trip signal arriving after the completion of a ten second high speed run will initiate another ten second high speed run.) The tracing pen that monitors the Events Recorder mode of operation will mark the strip chart to allow a subsequent review to identify the period during which the strip chart was advanced at high speed. High speed runs will continue to be initiated until trip signals are č,

no longer received or until the Events Recorder exhausts the on-line paper supply. The Events Recorder provides an acceptable means for establishing the sequence of trip signals for a post-trip review.

2. Parameters monitored

<u>Response</u>

The following trip signals are monitored by the Events Recorder:

<u>Pen (Channel) No.</u>	<u>Parameter (Trip Signal)</u>
1	Spare
2	Generator Differential
3	Negative Sequence
4	Generator Stator Ground
5	Loss of Field
6	Unit Differential
7	Auxiliary Transformer A Differential or 18 kV Overcurrent
8	Auxiliary Transformer A Sudden Pressure
9	Auxiliary Transformer B Differential or 18 kV Overcurrent
10	Auxiliary Transformer B Sudden Pressure
11	Main Transformer Sudden Pressure
12	Backup Overspeed Trip
13	Generator Out of Step
14	4 kV Bus 1C and 2C Undervoltage
15	Turbine No Load Trip
16	Turbine Bearing Oil Trip
17	Turbine Vacuum Trip
18	Turbine Thrust Bearing Oil Trip
19	Turbine Automatic System Solenoid Energized
20	Turbine Emergency Overspeed Trip
21	Transformer C Differential
22	Transformer C Sudden Pressure
23	220 kV Plant Circuit Breaker 1 and 2 Failure, Backup Protection
24	Load Drop Anticipator
25	Pressurizer High Level Scram
26	Safety Injection Scram
27	RCS Reduced Power Low Flow Scram
28	RCS Full Power Low Flow Scram
29	Steam Feedwater Mismatch Scram
30	Pressurizer Fixed High Pressure Scram
31	Pressurizer Variable Low Pressure Scram
32	Intermediate Range High Startup Rate Scram
33	Power Range Over Power Scram
34	Pressurizer Variable High Pressure
	Scram

4,

35	Turbine Trip Scram
36	Reactor Trip
37	Transformer A 4 kV Overcurrent Trip
38	Transformer B 4 kV Overcurrent Trip
39	Steam Generator High Level Trip
40	Events Recorder High Speed Motor Trace

3. Time discrimination between events

#### Response

The Events Recorder strip chart would be used to assess the sequence of events in a post-trip review. The sequence of events would be determined by noting the relative position of the recorder pens, the strip chart speed (normal or high speed) and the relative position of the marks recorded by the pens. The time discrimination between receipt of the initial trip signal and receipt of a subsequent trip signal is approximately one to two seconds. The time discrimination between signals received while the Events Recorder is in the high speed mode of operation is on the order of tenths of a second.

4. Format for displaying data and information

## Response

The format for displaying data and information from the Events Recorder is in the form of a strip chart. The strip chart is continuously traced by forty heated pens, each pen associated with one of the forty recorder channels. Receipt of a signal is marked on the strip chart as an offset from the normal trace of the recorder pen associated with the channel receiving the trip signal. Subsequent signals are marked in the same manner. Channel 40 of the Events Recorder monitors the Events Recorder's mode of operation (normal or high speed). While in high speed operation, the Channel 40 pen will indicate this condition as an offset from the normal trace. This allows the post-trip review to establish the period during which the chart was traveling at high speed.

5. Capability for retention of data and information

#### Response

Completed Events Recorder strip charts are retained for the life of the plant by the onsite Corporate Documentation Management Center, regardless of whether or not a trip has been recorded on the chart. If a trip has been recorded on a chart, the chart is marked in accordance with Operating Instruction SO1-14-8 to facilitate identification of the period of interest. The charts are marked thirty minutes prior to trip and thirty minutes after the Events Recorder has completed the high speed run initiated by the first trip signal.

6. Power source(s) (e.g., Class IE, non-Class IE, non-interruptible)

### Response

The power source for the Events Recorder is Class IE.

- 2. Capability for assessing the time history of analog variables needed to determine the cause of unscheduled reactor shutdowns, and the functioning of safety-related equipment.
  - Brief description of equipment (e.g., plant computer, dedicated computer, strip charts)

#### Response

The sources of information for assessing the time history of analog variables are the control room data recorders and the Technical Support Center Critical Function Monitoring System (CFMS).

The control room data recorders can be grouped into two categories: reactor plant recorders and turbine plant recorders. The reactor plant recorders are strip chart type, continuous monitors. The turbine plant recorders are either strip chart or circular chart type and provide either continuous or periodic monitoring. Periodic monitoring refers to parameter recording at a frequency of at least once every two minutes.

The CFMS comprises the data acquisition system for the onsite Technical Support Center. The conceptual design of the CFMS was provided in our July 1, 1981 letter, which was supplemented by our November 10, 1983 letter. The CFMS consists of a Fox III computer, associated subsystems (SPEC 200 interface rack, Universal Field Multiplexer) and system peripherals (Printer, Cathode Ray Tube, Disk, Modem) and provides continuous monitoring, storing, retrieving and online display of selected plant parameters deemed to be critical to plant operation. The CFMS is being installed during the current outage.

2. Parameters monitored, sampling rate, and basis for selecting parameters and sampling rate

#### Response

The control room data recorders, recorder types, sampling rates, power sources, parameters monitored and scales are provided in Table 1. The parameters identified in Table 1 are all of the parameters recorded in the control room that provide necessary information for operations and post-trip review. The sampling rates are continuous as shown in Table 1 except for certain turbine plant parameters that are not subject to rapid fluctuation. These parameters are monitored with a frequency of at least once every two minutes. The parameters monitored by the control room recorders, and the sampling rates, were established by previous plant design. However, the recorders are adequate for a post-trip review to determine the time history of parameters monitored. In addition, the CFMS will supplement control room recorder information.

1

TABLE 1: CONTROL ROOM DATA RECORDER CAPABILITY FOR ASSESSING THE TIME HISTORY OF ANALOG VARIABLES

Data Recorder Number	Recorder Type (Strip Chart or <u>Circular Chart)</u>	Sampling Rate (Continuous <u>or Periodic)*</u>	Power Source	<u>Parameter Monitored</u>	Scale <u>(Parameter Range)</u>
Reactor Pla	nt Recorders				•
YR-456	Strip Chart	Continuous	IE	Steam Generator A Steam Flow Feedwater Flow Water Level (Narrow Range)	0-2.5 Million lbm/hr. 0-2.5 Million lbm/hr. 0-100%
YR-457	Strip Chart	Continuous	IE	Steam Generator B Steam Flow Feedwater Flow Water Level (Narrow Range)	0-2.5 Million lbm/hr. 0-2.5 Million lbm/hr. 0-100%
YR-458	Strip Chart	Continuous	IE	Steam Generator C Steam Flow Feedwater Flow Water Level (Narrow Range)	0-2.5 Million lbm/hr. 0-2.5 Million lbm/hr. 0-100%
TP-402	Strip Chart	Continuous	IE	Loop A Cold Leg Wide Range Temperature	0-600°F
TR-405	Strip Chart	Continuous	IE	Coolant and Reference Average Temperatures	525-600°F
PR-425	Strip Chart	Continuous	IE	Reactor Coolant Wide Range Pressure	0-3000 psig
YR=404	Not Available - To Be Replaced During Current Outage	N/A	IE	Control Rod Position	N/A
NLR-1200-1	Strip Chart	Continuous	IE	Nuclear Power	0-120%
TR-430	Strip Chart	Continuous	IE	Pressurizer Liquid and Vapor Temperature	100-700°F
LR-430	Strip Chart	Continuous	IE	Pressurizer Level	0-100%
PR-430	Strip Chart	Continuous	IE	Narrow Range Pressurizer Pressure	1600-2400 psig
1R-400	Strip Chart	Continuous	IE 🖌	Steam Generator Temperature Differential	-15 - +60°F
Turbine Pla	ant Recorders				
R-2	Strip Chart	Periodic	Non-IE	Turbine Metal Temperatures	0-600°F
R-3	Strip Chart	Periodic	Non-IE :	Turbine Temperatures	0-250 <sup>0</sup> F
R-5	Strip Chart	Periodic	Non-IE	Generator and Transformer Temperatures	0-150°C
R-6	Strip Chart	Periodic	Non-IE	Generator Gas and Exciter Temperature	0-100°C
R-7	Circular Chart	Continuous	Non-IE	Feed Pump Suction Pressure	0-500 psig
R-7	Circular Chart	Continuous	Non-IE	Feed Pump Suction Temperature	0-500°F
R-8	Strip Chart	Continuous	Non-IE	Feedwater and Steam Pressure	0-1500 psig
PHR-1	Circular Chart	Continuous	Non-IE	Ph-Stm. B.D., 1st Pt. Htr. Oisch., Flash Evap. Disch.	2-12
ANR-1	Strip Chart	Continuous	Non-IE	Dissolved Oxygen	0-20 parts per billio
CRT-1	Circular Chart	Continuous	Non-IE	Conductivity, 1st Pt. Htr. (E and W)	0-10 micromhos
CR-2	Circular Chart	Continuous	Non-IE	Hotwell Conductivity	0.1-10 micromhos
N/A	Strip chart	Continuous	Non-IE	Unit Net Megawatts	-15 - +485 MWe
N/A	Strip Chart	Periodic	Non-IE	Turbine Generator Supv. Equipment Vibration Eccentricity Casking Expansion Differential Expansion	0-15 mils 0-10 mils 0-1 inch 0-1 inch
N/A·	Strip Chart	Continuous	Non-IE	Turbine Rotor Position	0-120 mils
N/A	Strip Chart	Continuous	Non-IE	Turbine Valve Movement and Speed	0-100% 0-2500 rpm
N/A	Computer Printout	Periodic	Non-IE	Circulating Water AT Printout	4 digit capacity or

\* Periodic sampling rate denotes recording of parameters with a frequency of at least once every two minutes.

-6-

Parameters monitored by the CFMS are listed in Table 2. These parameters and the sampling rates were selected consistent with our commitments regarding recording capability for Post-TMI Category B requirements.

RANGE

0-3000 psig

147.5-353 IN H<sub>2</sub>0

-5 - +245 psig

-10 - +12 Ft

0 -1500 psig

0-400 IN H<sub>2</sub>0

0-6000 GPM

0-300 GPM

0-300 GPM

 $100 - 700^{\circ}F$ 

0 -110%

0-700°F

# TABLE 2: CRITICAL FUNCTION MONITORING SYSTEM CAPABILITY FOR ASSESSING THE TIME HISTORY OF ANALOG VARIABLES

#### DESCRIPTION SENSOR 1. Pressurizer Pressure P 2425X2 2. Pressurizer Level L 435 3. Containment Pressure P 3001 4. Containment Water Level L 3002 5. Sphere Sump Level L 3001 6. Steam Generator Header Pressure P 3459B 7. Steam Gen. A, B, C Level L 450, L 451, L 452 Hot Leg A, B, C Temperature 8. T 3401A, T 3411A T 3421A 9. Safety Injection Flow F 2912 F 2913 F 2914 10. Auxiliary Feedwater Flow F 3453 F 3454 F 3455 11. SI Recirculation Flow F 2114B, F 2114C F 3114A 12. In Core Thermocouples TED 3 **TED 13** TEM 3 **TEM 13**

**TEF 11** TEK 5 **TEK 11** 13. Condensate Storage Tank Level LT 6A 0 - 40 Ft14. Recirculation Pump Flow FT 500, FT 501 0 - 900 GPM 15. Charging Line Flow FIT 1112 0 - 110 GPM16. Containment Spray System Flow FT 504 0 - 1500 GPM 17. Nuclear Instrument System CHANNEL 1201 10<sup>6</sup> Counts/sec. CHANNEL 1206 0-120% Power 18. Refueling Water Storage Tank LT 3020 0 - 435 IN H<sub>2</sub>0 Level 19. PORV Valve Position CV 545 Open/Close CV 546 20. PORV Block Valve Position CV 530 Open/Close CV 531 21. Pressurizer Safety Valve CV 532 Open/Close CV 533 22. Reactor Trip Z2068 Tripped/Normal 23. Containment Isolation Z3067 CIS INIT/Normal Z2067

TEF 5

3. Duration of time history (minutes before trip and minutes after trip.)

## <u>Response</u>

The control room data recorders operate independently of a reactor trip. Therefore, historical information is available for all phases of plant operation. Strip chart color coding enables the operators to recognize when the end of a chart is approaching so that chart changeout can be accomplished in a timely manner. The only limit on recorded information is the time required to replace a completed chart with a new chart. However, the short time required to perform a chart changeout combined with the unlikely event of a coincident trip provides assurance that relevant information will be recorded.

The CFMS has a dedicated "Post-Trip Review" function. The Post-Trip Review monitors up to ten contacts which cause the review to trip when the contacts change state. Five minutes after the trip, all data for thirty minutes prior to trip and five minutes after the trip is automatically printed. Use of the CFMS for a post-trip review is not limited by the dedicated Post-Trip Review function. The CFMS has continuous twenty-four hour storage. Any information recorded during the previous twenty-four hours can be retained by a hard copy printout or by recording the information on a disk.

 Format for displaying data including scale (readability) of time histories

## <u>Response</u>

The control room data recorder types (strip or circular) and the monitored parameter ranges are identified in Table 1. The strip or circular charts are such that parameter values can be readily determined. Data stored in the CFMS can be displayed on a hard copy computer printout or on a CRT terminal screen. In addition, CFMS data can be displayed as follows:

A. <u>Extended Library</u>

This is the heart of display system. It allows the operator to execute programs (typically alarm groups or graphic displays) from operator's console.

## B. <u>Current Alarm Display</u>

This function is used to acknowledge all new alarms (shown with status blinkings).

## C. <u>Digital Trending</u>

The Digital Trending trends to a printer up to 10 blocks of plant parameter at a time. It is used interactively in a question and answer fashion.

## D. <u>Point Summaries</u>

The Point Summary display allows the operator to set various listings of blocks in the system which are in a certain state (such as STANDBY, or off scan).

## E. <u>Bar Chart Display</u>

The Bar Chart Display is used to display up to 38 normalized block values in a graphical vertical bar chart form. Each block can be displayed in a different color to indicate the alarm status.

# F. Post Trip Review

The Post Trip Review monitors up to 10 contacts which, when they change state, cause the review to trip. Five minutes after the trip, all data for thirty minutes prior to trip and five minutes after trip is automatically printed.

## G. <u>Alarm History</u>

The Alarm History display shows the latest 20 block alarms in the following six fields:

- 1. Time and date of alarm
- 2. Block name
- 3. 32 character description of block
- 4. Current value of block
- 5. Units of block
- 6. Alarm state of block

## H. <u>Historical Trending</u>

The Historical Trend will display 60 data values for any block which is being stored in the 24 hour data files.

# I. Single Point Display

The Single Point Display displays any valid plant parameter block for the following items:

- 1. Block name
- 2. Block description
- 3. Units and alarm status
- 4. Valid parameter name
- 5. Parameter values

## J. <u>Logging</u>

The Logging function is provided to gather all input values at the hour and print them with 10 points per line.

K. Fast Historical Trend

This is a history of the last 30 minutes for 15 points (each point is stored every second).

5. Capability for retention of data, information, and physical evidence (both hardware and software)

## Response

Completed recorder charts are retained for the life of the plant by the onsite Corporate Documentation Management Center, regardless of whether or not a trip occurred while the charts were in operation. If a trip occurs, the charts are marked in accordance with Operating Instruction SO1-14-8 to facilitate identification of the period of interest. The charts are marked thirty minutes prior to trip and thirty minutes after steady state conditions have been reached.

Information stored in the CFMS for the previous twenty-four hours can be retained by a hardcopy computer printout or by recording the information on a disk.

6. Power source(s) (e.g., Class IE, non-class IE, non-interruptible)

<u>Response</u>

Power sources for the control room data recorders are identified in Table 1.

The power source for the CFMS is non-Class IE.

3. Other data and information provided to assess the cause of unscheduled reactor shutdowns.

## Response

Other data and information used to assess the cause of unscheduled reactor shutdowns is provided by Operating Instruction SO1-14-27, Post-Trip Review, (discussed in our response to Position 1.1 above) and Operating Instruction SO1-14-8, Operating Charts and Data Logs Control (discussed in our response to Position 1.2 above).

In addition, applicable normal and emergency operating instructions would be included in a post trip review as necessary.

 Schedule for any planned changes to existing data and information capability.

### <u>Response</u>

The control room control rod position recorder is scheduled to be replaced during the current outage. There are no other planned changes to existing data and information capability.

# 2.1 EQUIPMENT CLASSIFICATION AND VENDOR INTERFACE (REACTOR TRIP SYSTEM COMPONENTS)

## Position

Licensees and applicants shall confirm that all components whose functioning is required to trip the reactor are identified as safety-related on documents, procedures, and information handling systems used in the plant to control safety-related activities, including maintenance, work orders, and parts replacement. In addition, for these components, licensees and applicants shall establish, implement and maintain a continuing program to ensure that vendor information is complete, current and controlled throughout the life of the plant, and appropriately referenced or incorporated in plant instructions and procedures. Vendors of these components should be contacted and an interface established. Where vendors can not be identified, have gone out of business, or will not supply the information, the licensee or applicant shall assure that sufficient attention is paid to equipment maintenance, replacement, and repair, to compensate for the lack of vendor backup, to assure reactor trip system reliability. The vendor interface program shall include periodic communication with vendors to assure that all applicable information has been received. The program should use a system of positive feedback with vendors for mailings containing technical information. This could be accomplished by licensee acknowledgement for receipt of technical mailings. The program shall also define the interface and division of responsibilities among the licensees and the nuclear and nonnuclear divisions of their vendors that provide service on reactor trip system components to assure that requisite control of and applicable instructions for maintenance work are provided.

#### Response

All documents, procedures and information handling systems used to control safety-related activities, including maintenance, work orders and parts replacement, are based on the San Onofre Unit 1 Q-List, which is published as attachments to Station Order SO1-A-112, "Station Quality Assurance Program." The Q-List identifies systems, subsystems and major components and classifies them as safety-related or non-safety related. During the development of documents, procedures, maintenance orders, work orders and parts replacement activities, the Q-List is consulted to determine the safety classification of the activity to be performed. The Quality Assurance Organization makes certain that safety-related activities are adequately identified, controlled and documented by performing reviews, surveillances and audits. The Reactor Protection System, which includes all components whose functioning is required to trip the reactor, is classified as safety-related on the Q-List. The following discussion addresses the control of vendor and other information, and the vendor interface program for the reactor trip system, at San Onofre Unit 1.

The following background information is provided regarding the completeness of vendor information. While this information is more directly applicable to Position 2.2.2 for safety-related equipment supplied by vendors other than Westinghouse (since our vendor interface program with Westinghouse complies with this generic letter), this information is presented here to provide an overall description of the San Onofre Unit 1 programs concerning vendor information.

Vendor information has been handled in a number of ways during the construction and operation of San Onofre Unit 1. During construction, the control point for vendor supplied information was Bechtel Power Corporation. Vendor supplied information was received, logged and technical reviews were conducted as appropriate. This information was turned over by Bechtel Power Corporation to the plant operating staff at completion of construction. However, no accounting was made for all vendor data at that time. From completion of construction until 1977, vendor information was handled on a case-by-case basis by the plant staff. When vendor information was received, the information was evaluated by qualified personnel within the affected department. This information has been used to develop plant programs and vendors have been directly consulted as necessary. However, this process did not provide the accountability and audit trails that the new Configuration Control Program provides.

In 1977 a central file of vendor information was established at the onsite Corporate Documentation Management Center. This file included remaining information turned over by Bechtel Power Corporation at completion of construction and available information received at the plant during operations. This central file has served as the control point for vendor information. Vendor information is now controlled and factored into plant activities under a formal program as discussed below.

The Nuclear Safety Group and the Independent Safety Engineering Group (ISEG) route NRC IE Circulars and Information Notices, NSSS Vendor Technical Bulletins, INPO Significant Operating Experience Reports and Significant Event Reports, and a wide variety of utility reports, such as selected LER's and Nuclear Operations and Maintenance Information Service Reports, to the applicable organization. When necessary, responses to the information are requested in this routing. These requests are tracked until the response is completed. Other information (e.g., information received directly by QA, station management, project management, etc.) is also routed to the appropriate organization. For vendor information other than the NSSS Vendor Technical Bulletins, a comprehensive Configuration Control program is being implemented. This program has been under development for the past year. Vendor information 12

received at the station is routed to Configuration Control for control and tracking. Upon receipt, Configuration Control reviews the information for impact on plant documents. Where plant document changes are necessary, Configuration Control forwards a copy of the vendor information to the station division responsible for the change. Further, Configuration Control tracks the change to assure that all affected plant documents are revised. Configuration Control also maintains an awareness of the disposition of NSSS Vendor Technical Bulletins.

In addition to the in-house program for control of vendor information as discussed above, a vendor interface program has been established with the NSSS vendor, Westinghouse. This program includes all safety-related components procured from Westinghouse, including those of the Reactor Trip System. The Water Reactors Division (WRD) of the Westinghouse Electric Corporation supplements previously supplied information through Technical Bulletins. These bulletins are provided to ensure proper and safe installation, maintenance, and repair of equipment supplied by WRD and, when safety-related, are identified as such. Westinghouse subjects these bulletins to the same design control process that is applied to the equipment to which they relate. SCE maintains a return-receipt distribution for technical bulletins from WRD. Additionally, on a periodic basis (not less than once per year), a list of current Technical Bulletins and data letters are published as a bulletin and transmitted to SCE. Further, to assure that the maintenance of NSSS components receives the proper attention, SCE maintains a contract with Westinghouse for an onsite representative. This representative is available to answer questions and provide technical assistance regarding equipment provided by Westinghouse.

Additionally, the station organization responsible for service on safety-related equipment maintains that responsibility when other SCE personnel or vendors perform service. Material Control Procedure SO123-XI-1.2, "Control of Suppliers While Onsite," provides a uniform method for processing and monitoring vendor service.

# 2.2 EQUIPMENT CLASSIFICATION AND VENDOR INTERFACE (PROGRAMS FOR ALL SAFETY-RELATED COMPONENTS)

#### Position

. .

Licensees and applicants shall submit, for staff review, a description of their programs for safety-related\* equipment classification and vendor interface as described below:

<sup>\*</sup> Safety-related structures, systems, and components are those that are relied upon to remain functional during and following design basis events to ensure: (1) the integrity of the reactor coolant boundary, (2) the capability to shut down the reactor and maintain it in a safe shutdown condition, and (3) the capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposures comparable to the guidelines of 10 CFR Part 100.

- For equipment classification, licensees and applicants shall describe their program for ensuring that all components of safety-related systems necessary for accomplishing required safety functions are identified as safety-related on documents, procedures, and information handling systems used in the plant to control safety-related activities, including maintenance, work orders and replacement parts. This description shall include:
  - The criteria for identifying components as safety-related within systems currently classified as safety-related. This shall <u>not</u> be interpreted to require changes in safety classification at the systems level.

## Response

The San Onofre Unit 1 Q-List identifies the safety classification of systems, subsystems and major components. The Q-List is developed in accordance with the Quality Assurance program as discussed in response to Position 2.2.1.2 below. In general, components located within systems classified as safety-related on the Q-List are also classified as safety-related. Classification of such components is based on consideration of component and system function, interface with other safety-related and non-safety related systems, General Design Criteria, 10 CFR 50, ANSI N18.2 and applicable regulatory guides.

2. A description of the information handling system used to identify safety-related components (e.g., computerized equipment list) and the methods used for its development and validation.

#### <u>Response</u>

San Onofre Unit 1 does not use a computerized system to identify safety-related components. The San Onofre Unit 1 Q-List is the primary source of information used to identify safety-related systems, subsystems and major components. The Q-List is developed, reviewed, approved and controlled in accordance with Quality Assurance Program procedures. The Station Manager is responsible for maintaining the Q-List and the Manager, Nuclear Engineering and Safety, the Project Manager, and the Manager, Technical are responsible for changes to the Q-List.

3. A description of the process by which station personnel use this information handling system to determine that an activity is safety-related and what procedures for maintenance, surveillance, parts replacement and other activities defined in the introduction to 10 CFR 50, Appendix B, apply to safety-related components.

#### Response

The safety classification of all activities associated with San Onofre Unit 1 are based on the San Onofre Unit 1 Q-List. The administrative program emphasizes the use of procedures specific to the task being performed to assure appropriate Quality Assurance practices are applied. At present there is no distinction between safety-related and non-safety related procedures. Instead, considerations associated with safety-related activities are included in the specific procedure governing performance of the activity. In this manner, station personnel use the approved and controlled procedures to assure that the appropriate Quality Assurance requirements are fulfilled for each specific activity.

Station procedures are developed in accordance with the Quality Assurance Program. Procedure development includes review of the San Onofre Unit 1 Q-List to determine the safety classification. In general, activities are safety-related if associated with a component identified as safety-related by the Q-List. In addition, the Quality Assurance Organization performs reviews, surveillances and audits to make certain that safety-related activities are adequately identified, controlled and documented.

The Station Procedure Group releases procedures to the onsite Corporate Documentation Management (CDM) Center for distribution to station organizations. Prior to use, each station organization is responsible for verifying that a procedure is current through one of the following methods: checking against a controlled procedure file and any outstanding temporary change notices, accessing an SCE Document Configuration System TSO Terminal, referencing a current (within one week) Configuration Control Log and associated daily update, contacting CDM by telephone or through counter inquiry, or obtaining a working copy of the current procedure from CDM.

Replacement parts are procured in accordance with Material Control Procedure SO123-XI-1.0. Requisitions for items and services are routed through Procurement Engineering. Procurement Engineering identifies the technical and quality requirements in accordance with Material Control Procedures SO123-XI-2.0 and SO123-XI-2.1. Implementation of these procedures provides assurance that parts and services are procured in accordance with the Quality Assurance Program.

 A description of the management controls utilized to verify that the procedures for preparation, validation and routine utilization of the information handling system have been followed.

4

### <u>Response</u>

The Quality Assurance Program specifies the management controls utilized to assure that documents and activities based on the Q-List are properly developed. These controls require strict adherence to procedures, interdisciplinary reviews where applicable and document control, and also identify management responsibilities. The Quality Assurance Organization performs reviews, surveillances, and audits to ensure compliance with the Quality Assurance Program.

5. A demonstration that appropriate design verification and qualification testing is specified for procurement of safety-related components. The specifications shall include qualification testing for expected safety service conditions and provide support for the licensees' receipt of testing documentation to support the limits of life recommended by the supplier.

#### Response

Requisitions for items or services are routed through Procurement Engineering in accordance with Material Control Procedure S0123-XI-1.0. Procurement Engineering identifies the technical and quality requirements in accordance with Material Control Procedures S0123-XI-2.0 and S0123-XI-2.1. Material Control Procedure SO123-XI-2.1 describes the Five Level Procurement system and establishes appropriate controls over each procurement level. Procurement Engineering uses this procedure to determine the procurement level for procurements that require application of the QA Program. According to the classification of the item to be procured, the Quality Assurance Organization performs inspections and audits to ensure appropriate design and manufacture. All Class IE safety-related electrical equipment requiring environmental qualification must have a complete EQ package prior to use in plant operation, or implementation of remedial actions until the item is completely qualified. The EQ package serves as documentation to verify that the item has been appropriately qualified.

6. Licensees and applicants need only to submit for staff review the equipment classification program for safety-related components. Although not required to be submitted for staff review, your equipment classification program should also include the broader class of structures, systems, and components important to safety required by GDC-1 (defined in 10 CFR Part 50, Appendix A, "General Design Criteria, Introduction").

## <u>Response</u>

Information concerning our equipment classification program for safety-related components is provided in our responses to Positions 2.2.1.1, 2, 3, 4 and 5 above. With respect to our equipment classification program for structures, systems and components important to safety, we are participating in the Utility Safety Classification Group. The purpose of this Group is to develop a generic resolution to the NRC staff concerns regarding important to safety classification. We disagree that structures, systems and components important to safety constitute a broader class than safety-related structures, systems and components. All San Onofre Unit 1 plant structures, systems and components, whether classified as safety-related or non-safety related, have been designed and are maintained in a manner commensurate with their importance to the safe operation of the plant.

For vendor interface, licensees and applicants shall establish, 2. implement and maintain a continuing program to ensure that vendor information for safety-related components is complete, current and controlled throughout the life of their plants, and appropriately referenced or incorporated in plant instructions and procedures. Vendors of safety-related equipment should be contacted and an interface established. Where vendors cannot be identified, have gone out of business, or will not supply information, the licensee or applicant shall assure that sufficient attention is paid to equipment maintenance, replacement, and repair, to compensate for the lack of vendor backup, to assure reliability commensurate with its safety function (GDC-1). The program shall be closely coupled with action 2.2.1 above (equipment qualification). The program shall include periodic communication with vendors to assure that all applicable information has been received. The program should use a system of positive feedback with vendors for mailings containing technical information. This could be accomplished by licensee acknowledgment for receipt of technical mailings. It shall also define the interface and division of responsibilities among the licensee and the nuclear and nonnuclear divisions of their vendors that provide service on safety-related equipment to assure that requisite control of and applicable instructions for maintenance work on safety-related equipment are provided.

## <u>Response</u>

• .

The response to Position 2.1 above describes our vendor interface program for the reactor trip system components and our current in-house program for control of vendor information. The vendor interface program has been established with the NSSS vendor and in addition to the reactor trip system components provided by this vendor, the program encompasses all NSSS vendor supplied safety-related components. Therefore, the following discussion applies to safety-related components provided by vendors other than the NSSS vendor.

An appropriate response to Position 2.2.2 is being developed for safety-related components outside the scope of our vendor interface program with Westinghouse. As part of these efforts, we are participating in the Nuclear Utility Task Action Committee (NUTAC) On Generic Letter 83-28, Section 2.2.2. The NUTAC purpose is to define an appropriate vendor interface program. Upon completion of NUTAC activities, which is scheduled for February 1984, we will evaluate the NUTAC program based on responsiveness to the concerns of Position 2.2.2, applicability to San Onofre Unit 1 and effectiveness compared to alternative approaches. Based on this evaluation, we will develop an appropriate response to Position 2.2.2 and provide this response to you within ninety days of completion of the NUTAC activities.

3.1 POST-MAINTENANCE TESTING (REACTOR TRIP SYSTEM COMPONENTS)

## Position

.

The following actions are applicable to post-maintenance testing:

 Licensees and applicants shall submit the results of their review of test and maintenance procedures and Technical Specifications to assure that post-maintenance operability testing of safety-related components in the reactor trip system is required to be conducted and that the testing demonstrates that the equipment is capable of performing its safety functions before being returned to service.

### Response

The San Onofre Unit 1 Reactor Trip Breaker Maintenance Program is specified in Maintenance Procedure SO1-I-4.58. This program requires post-maintenance operability testing prior to declaring a breaker operable. The testing consists of verifying independent operation of the shunt trip and undervoltage trip attachments while installed in the normal trip system configuration. This testing, completed in accordance with Instrument and Test Procedure SO1-II-2.4.4, "Reactor Trip Test," utilizes signals generated from the Reactor Protection System and includes automatic as well as manual signals. For other safety-related reactor trip system components, a Retest Committee performs an interdisciplinary review of each maintenance work order. Based on this review, the Retest Committee establishes the minimum post-maintenance operability testing required. This program provides assurance that reactor trip system components are capable of performing their safety function before being returned to service.

 Licensees and applicants shall submit the results of their check of vendor and engineering recommendations to ensure that any appropriate test guidance is included in the test and maintenance procedures or the Technical Specifications, where required.

### Response

Station test and maintenance procedures have been developed based on vendor and engineering recommendations where available (see the response to Position 2.1 above concerning the completeness, control and utilization of vendor information). This information is reviewed and test and maintenance procedures are revised as necessary based on this review. The San Onofre Unit 1 Reactor Trip Breaker Maintenance Program is specified by Maintenance Procedure SO1-I-4.58. This procedure is based on the Westinghouse Instruction Book - Instructions for DB-50, DBF-16 and DBL-50 Air Circuit Breakers (1965), as supplemented by Westinghouse NSD Radar Response - Reactor Trip Breaker Failure at Zion 2, and Westinghouse NSD Technical Bulletins 83-02 and 83-03, and references NRC IE Bulletins 79-11 and 83-01 and NRC IE Information Notice 83-50. In the above manner, vendor and engineering recommendations are appropriately factored into the San Onofre Unit 1 reactor trip system test and maintenance program.

3. Licensees and applicants shall identify, if applicable, any post-maintenance test requirements in existing Technical Specifications which can be demonstrated to degrade rather than enhance safety. Appropriate changes to these test requirements, with supporting justification, shall be submitted for staff approval. (Note that action 4.5 discusses on-line system functional testing.)

## Response

No post maintenance testing requirements in the existing Technical Specifications have been demonstrated by experience to degrade rather than enhance safety.

3.2 POST-MAINTENANCE TESTING (ALL OTHER SAFETY-RELATED COMPONENTS)

#### Position

The following actions are applicable to post-maintenance testing:

 Licensees and applicants shall submit a report documenting the extending of test and maintenance procedures and Technical Specifications review to assure that post-maintenance operability testing of all safety-related equipment is required to be conducted and that the testing demonstrates that the equipment is capable of performing its safety functions before being returned to service.

## Response

A comprehensive post-maintenance testing program has been implemented at San Onofre Unit 1. The program scope includes all maintenance orders involving safety-related, Technical Specification related or ASME Code (Sections III and XI) related equipment, excluding maintenance orders written to perform surveillances. A Retest Committee performs an interdisciplinary review of each maintenance order to establish the minimum post-maintenance operability testing required. The testing established by the Retest Committee provides assurance that all safetyrelated components are capable of performing their safety function before being returned to service. 2. Licensees and applicants shall submit the results of their check of vendor and engineering recommendations to ensure that any appropriate test guidance is included in the test and maintenance procedures or the Technical Specifications where required.

## <u>Response</u>

· · ·

Station test and maintenance procedures have been developed based on vendor and engineering recommendations where available (see the response to Position 2.1 concerning the completeness, control and utilization of vendor information at San Onofre Unit 1). This information is reviewed and test and maintenance procedures are revised as necessary based on this review. In addition, vendor and engineering information is maintained by the onsite Corporate Documentation Management Center. This information is available for consultation by the Retest Committee, Maintenance, Operations or any other station group.

3. Licensees and applicants shall identify, if applicable, any postmaintenance test requirements in existing Technical Specifications which are perceived to degrade rather than enhance safety. Appropriate changes to these test requirements, with supporting justification, shall be submitted for staff approval.

#### Response

No post-maintenance testing requirements in existing Technical Specifications have been identified through experience to degrade rather than enhance safety.

4.1 REACTOR TRIP SYSTEM RELIABILITY (VENDOR-RELATED MODIFICATIONS)

## <u>Position</u>

All vendor-recommended reactor trip breaker modifications shall be reviewed to verify that either: (1) each modification has, in fact, been implemented; or (2) a written evaluation of the technical reasons for not implementing a modification exists.

For example, the modifications recommended by Westinghouse in NCD-Elec-18 for the DB-50 breakers and a March 31, 1983, letter for the DS-416 breakers shall be implemented or a justification for not implementing shall be made available. Modifications not previously made shall be incorporated or a written evaluation shall be provided.

## Response

The San Onofre Unit 1 reactor trip breakers are Westinghouse DB-50 breakers. All vendor-recommended reactor trip breaker modifications have been implemented at San Onofre Unit 1. Modifications recommended by Westinghouse in NCD-ELEC-18 for DB-50 breakers were implemented in Design Change No. 72-05. Modifications recommended in the March 31, 1983 Westinghouse letter for DS-416 breakers do not apply to the San Onofre Unit 1 reactor trip breakers.

# 4.2 REACTOR TRIP SYSTEM RELIABILITY (PREVENTATIVE MAINTENANCE AND SURVEILLANCE PROGRAM FOR REACTOR TRIP BREAKERS)

## <u>Position</u>

Licensees and applicants shall describe their preventative maintenance and surveillance program to ensure reliable reactor trip breaker operation. The program shall include the following:

1. A planned program of periodic maintenance, including lubrication, housekeeping, and other items recommended by the equipment supplier.

## Response

A comprehensive program for the maintenance, repair, lubrication, testing and housekeeping for the Westinghouse DB-50 Reactor Trip Breakers has been established at San Onofre Unit 1. This program is specified in Maintenance Procedure SO1-I-4.58. The basis for this program is the Westinghouse Instruction Book -- Instructions for DB-50, DBF-16 and DBL-50 Air Circuit Breakers (1965), as supplemented by Westinghouse NSD Radar Response -- Reactor Trip Breaker Failure at Zion 2 and Westinghouse NSD Technical Bulletins 83-02 and 83-03. NRC IE Bulletins 79-11 and 83-01 and NRC IE Information Notice 83-50 are also used as reference material for the breaker maintenance program. Preventative maintenance is performed on each breaker on a one-year interval. This maintenance interval has been revised from the previous refueling outage interval in response to IE Bulletin 83-01.

San Onofre Unit 1 is also participating in a Westinghouse Owners Group program established to investigate reactor trip switchgear experience and to perform a reliability assessment. This program is expected to be completed by the end of 1983 at which time the results of this program will be factored into the existing reactor trip breaker maintenance program. The switchgear experience investigation consists of a compilation of existing maintenance information, including lessons learned in the post-Salem interval. The reliability assessment will be based on a review of plant specific histories on reactor trip switchgear performance. We will review the recommendations resulting from the Westinghouse Owners Group program and provide you with a response within ninety days of the issuance of the recommendations. This response will provide the status of our review and our plans and schedules for completing the review and our plans and schedules, if available, for actions to be taken as a result of our review.

2. Trending of parameters affecting operation and measured during testing to forecast degradation of operability.

## Response

Data taken during the annual inspection, maintenance and testing of the reactor trip breakers is recorded on the Maintenance Data Record Form (MDRF). This information is reviewed by two levels of supervision and a

Support Engineer. All information from the MDRF that could be used to forecast degradation of the equipment is entered in the Safety-Related Preventive Maintenance Trending Manual. Trending data will be examined by the Maintenance Field Engineer and Supervisor of Plant Maintenance. Any abnormal trend will cause immediate action to be taken to investigate and correct the abnormality. The MDRF are permanently filed in CDM for further reference. Information related to failure rates and other data important on an industry wide basis is sent to the NPRDS files.

3. Life testing of the breakers (including the trip attachments) on an acceptable sample size.

#### Response

San Onofre Unit 1 is participating in a Westinghouse Owners Group program established to perform life cycle testing of the shunt trip attachment and the undervoltage trip attachment of the reactor trip switchgear. The program objectives are to establish the service life of these devices and to substantiate periodic test requirements with proper maintenance. The results of this program will be factored into maintenance, replacement and qualification programs upon completion of the program, which is scheduled for the second quarter of 1984. We will review the recommendations resulting from the Westinghouse Owners Group program and provide you with a response within ninety days of the issuance of the recommendations. This response will provide the status of our review and our plans and schedules for completing the review and our plans and schedules, if available, for actions to be taken as a result of our review.

4. Periodic replacement of breakers or components consistent with demonstrated life cycles.

#### Response

As discussed in the response to Position 4.2.3 above, we are participating in a Westinghouse Owners Group program to determine the service life of the shunt trip and undervoltage trip attachments. The results of this program will be incorporated into the San Onofre Unit 1 Reactor Trip Breaker Maintenance Program upon completion of the program. We will review the recommendations resulting from the Westinghouse Owners Group program and provide you with a response within ninety days of the issuance of the recommendations. This response Will provide the status of our review and our plans and schedules for completing the review and our plans and schedules, if available, for actions to be taken as a result of our review.

4.3 REACTOR TRIP SYSTEM RELIABILITY (AUTOMATIC ACTUATION OF SHUNT TRIP ATTACHMENT FOR WESTINGHOUSE AND B&W PLANTS)

## Position

Westinghouse and B&W reactors shall be modified by providing automatic reactor trip system actuation of the breaker shunt trip attachments. The shunt trip attachment shall be considered safety-related (Class IE).

## Response

The original design of San Onofre Unit 1 included automatic reactor trip system actuation of the reactor trip breaker shunt trip attachment. The San Onofre Unit 1 Reactor Protection System is classified as safety-related, Class IE. The reactor trip breaker shunt trip attachment components are part of the Reactor Protection System and, as such, are safety-related, Class IE.

4.4 REACTOR TRIP SYSTEM RELIABILITY (IMPROVEMENTS IN MAINTENANCE AND TEST PROCEDURES FOR B&W PLANTS)

## Position

Licensees and applicants with B&W reactors shall apply safety-related maintenance and test procedures to the diverse reactor trip feature provided by interrupting power to control rods through the silicon controlled rectifiers.

This action shall not be interpreted to require hardware changes or additional environmental or seismic qualification of these components.

### Response

This position does not apply to San Onofre Unit 1 since the NSSS was supplied by Westinghouse.

4.5 REACTOR TRIP SYSTEM RELIABILITY (SYSTEM FUNCTIONAL TESTING)

## Position

On-line functional testing of the reactor trip system, including independent testing of the diverse trip features, shall be performed on all plants.

1. The diverse trip features to be tested include the breaker undervoltage and shunt trip features on Westinghouse, B&W (see Action 4.3 above) and CE plants; the circuitry used for power interruption with the silicon controlled rectifiers on B&W plants (see Action 4.4 above); and the scram pilot valve and backup scram valves (including all initiating circuitry) on GE plants.

## Response

The annual maintenance and testing of each Reactor Trip Breaker (SOL-I-4.58) requires that an in-place undervoltage and independent shunt trip test be performed. The test, performed by Operations/I&C/Electrical Test personnel, utilizes signals generated from the Reactor Protection System, and both automatic and manual signals are generated. 2. Plants not currently designed to permit periodic on-line testing shall justify not making modifications to permit such testing. Alternatives to on-line testing proposed by licensees will be considered where special circumstances exist and where the objective of high reliability can be met in another way.

## Response

San Onofre Unit 1 is not designed to permit on-line reactor trip breaker functional testing. As discussed in responses to Positions 4.1 and 4.2 above and 4.5.3 below, we are participating in the Westinghouse Owners Group programs for determining suitable testing intervals, maintenance programs and breaker replacement intervals in order to assure high breaker reliability. The schedules for our responses to you concerning the impact of the Westinghouse Owners Group programs on maintenance and testing programs at San Onofre Unit 1 are identified in our responses to Positions 4.1, 4.2 and 4.5.3.

- 3. Existing intervals for on-line functional testing required by Technical Specifications shall be reviewed to determine that the intervals are consistent with achieving high reactor trip system availability when accounting for considerations such as:
  - 1. uncertainties in component failure rates
  - 2. uncertainty in common mode failure rates
  - 3. reduced redundancy during testing
  - 4. operator errors during testing
  - 5. component "wear-out" caused by the testing

Licensees currently not performing periodic on-line testing shall determine appropriate test intervals as described above. Changes to existing required intervals for on-line testing as well as the intervals to be determined by licensees currently not performing on-line testing shall be justified by information on the sensitivity of reactor trip system availability to parameters such as the test intervals, component failure rates, and common mode failure rates.

## Response

Reactor trip breaker testing is conducted on an annual basis consistent with the current Westinghouse recommendation. We are participating with the Westinghouse Owners Group in a program for determining suitable intervals for testings. The Owners Group has submitted a report, WCAP-10271, "Evaluation of Surveillance Frequencies and Out-of-Service Times for the Reactor Protection Instrumentation System" to the NRC. This report describes the impact of RPS unavailability of current and extended surveillance intervals. The Westinghouse Owners Group and the NRC staff are currently resolving open items concerning WCAP-10271. Westinghouse Owners Group recommendations will be reviewed and necessary changes to our testing, maintenance, and inspection procedures will be made upon completion of the program. We will review the recommendations resulting from the Westinghouse Owners Group program and provide you with a response within ninety days of the issuance of the recommendations. This response will provide the status of our review and our plans and schedules for completing the review and our plans and schedules, if available, for actions to be taken as a result of our review. Also included will be plans and schedules for any additions or changes to the Technical Specifications.

GLRoche:0016F