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I-MFA-51

MFP Exhibit 51
8/18/93 Dollie Feigel
REPORTER

NCR DC0-93-EM-N030 Rev. 00
June 7, 1993

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NCR DC0-93-EM-N030
COVERS NOT INSTALLED INSIDE HOT SHUTDOWN PANEL

MANAGEMENT SUMMARY

Covers not installed the hot shutdown panel for both Unit 1 and Unit 2. There are two 16 inch by 18 inch covers that should complete the enclosure that surrounds the switches inside the hot shutdown panel. The covers were observed to be laying in the bottom of the back of the hot shutdown panel. The mounting screws that should have been installed were no where to be found.

New screws were procured and the covers were re-installed inside the hot shutdown panel.

This write-up, dated June 7, 1993, includes minutes from the TRG meeting held on June 1, 1993.

The TRG concurred that this event should be addressed under NCR DC1-93-EM-N019, "Unit 1 4kV RHF Hinged Panel". Both NCR's address the failure to return the panel to its original configuration following work related activities within the panel. It was agreed that a single NCR would best address a programmatic solution to the problem.

NUCLEAR REGULATORY COMMISSION
Docket No. 50-275-OLA Official Exh. No. MFP 51
In the matter of PACIFIC GAS and ELECTRIC CO
STAFF ____ IDENTIFIED ✓
APPLICANT ____ RECEIVED ✓
INTERVENOR ✓ REJECTED ____
CONTENTION ____ WITNESS ____
Counsel for Orrick Riley & Assocs DATE 8-18-93
Other ____ Witness ____
Reporter Dollie Feigel

NCR DC0-93-EM-N030
COVERS NOT INSTALLED INSIDE HOT SHUTDOWN PANEL

I. Plant Conditions

Units 1 and 2 have been in various Modes and at various power levels with the conditions described below.

II. Description of Event

A. Summary:

Covers not installed the hot shutdown panel for both Unit 1 and Unit 2. There are two 16 inch by 18 inch covers that should complete the enclosure that surrounds the switches inside the hot shutdown panel. The covers were observed to be laying in the bottom of the back of the hot shutdown panel. The mounting screws that should have been installed were no where to be found. The covers were found to be laying in the bottom back of the panel.

B. Background:

Refer to NCR DC1-93-EM-N019.

C. Event Description:

Refer to NCR DC1-93-EM-N019.

D. Inoperable Structures, Components, or Systems that Contributed to the Event:

None.

E. Dates and Approximate Times for Major Occurrences:

Refer to NCR DC1-93-EM-N019.

F. Other Systems or Secondary Functions Affected:

None.

G. Method of Discovery:

Refer to NCR DC1-93-EM-N019.

H. Operator Actions:

None.

I. Safety System Responses:

None.

III. Cause of the Event

A. Immediate Cause:

Refer to NCR DC1-93-EM-N019.

B. Determination of Cause:

Refer to NCR DC1-93-EM-N019.

C. Root Cause:

Refer to NCR DC1-93-EM-N019.

D. Contributory Cause:

Refer to NCR DC1-93-EM-N019.

IV. Analysis of the Event

A. Safety Analysis:

The plant design basis for post-fire safe shutdown does not require that a fire in the hot shutdown panel allow control of components (with control capability form the HSD panel) from the control room. The requirements of 10CFR50, Appendix R, require that fire damage be limited so that one train of components necessary to achieve and maintain hot shutdown be free from fire damage. The ability to safely shutdown following a worse case fire in the hot shutdown panel fire area [fire area 5-A-4 for U1 and 5-B-4 for U2] has been evaluated as part of DCPP's compliance with Appendix R. No credit has ever been taken for any barriers internal to the hot shutdown panel. The Appendix R post-fire safe shutdown methodology assumes that all circuitry within the fire area (not just circuitry inside the HSD) has been damaged by fire. No internal separation within the panel has been taken credit for to ensure post-fire safe shutdown capability. This basis has

been documented in Appendix 9.5A of the FSAR (pp. 9.5A-97 and 9.5A-503).

The ability to safely shutdown following a fire in the hot shutdown panel fire areas was enhanced to provide a level of safety greater than that which was approved by the NRC in SSERS 23 and 31. Circuit changes were implemented during 1R5/2R5 to ensure control of ESF pumps (ASW, CCW, AFW, and CCPs) from the hot shutdown panel following a worst case control room/cable spreading room fire. The circuit changes also ensured that a fire in the hot shutdown panel would not adversely affect control of these pumps from the control room (under the original design, approximately one-half of the pump controls could have been damaged by a fire in the HSD panel). The affected circuits at the hot shutdown panel are normally de-energized and therefore do not have a high energy source that could cause flashover from one component to another during a short-circuit condition.

B. Reportability:

1. Reviewed under QAP-15.B and determined to be non-conforming in accordance with Section 2.1.2. Refer to NCR DC1-93-EM-N019.

2. Reviewed under 10 CFR 50.72 and 10 CFR 50.73 per NUREG 1022 and determined to be not reportable in accordance with the guidance provided in NUREG 1022 and associated supplements.

   Based on the safety analysis as described above, and the fact that an interal hot shutdown panel fire would not affect the controls of the components associated with the missing covers, there is no basis per NUREG 1022 to report this condition. In addition, the DCPP design basis does not consider concurrent fires at the hot shutdown panel and the control room/cable spreading room, nor does the design basis require consideration of a fire concurrent with a LOCA.

3. Reviewed under 10 CFR Part 21 and determined that this problem will not require a 10 CFR 21 report, since (a) it is being evaluated under 10 CFR 50.72/73, and (b) it does not involve defects in vendor-supplied services/spare parts in stock.

4. This problem will not be reported via an INPO Nuclear Network entry.

5. Reviewed under 10 CFR 50.9 and determined to be not reportable since this event does not have a significant implication for public health and safety or common defense and security.

6. Reviewed under the criteria of AP C-29 requiring the issue and approval of an OE and determined that an OE is not required.

V. Corrective Actions

A. Immediate Corrective Actions:

The internal hot shutdown panels were re-installed.

B. Investigative Actions:

1. For affected components (i.e. located under the subject covers), determine the location of the associated mutually redundant component. Identify the consequences of failure of the mutually redundant components on equipment operation (i.e. normal ops, safe shutdown, etc.).

RESPONSIBILITY: Van Luven, P. RETURN
DEPARTMENT: NES Electrical Engineering
Tracking AR: A0307850, AE #02

2. Determine whether the mutually redundant components and associated circuits identified in AE #02 above meet the 5" separation criteria with the covers missing.

RESPONSIBILITY: Foat, S. RETURN
DEPARTMENT: Electrical Maintenance
Tracking AR: A0307850, AE #03

3. Determine work history in the Unit 1 hot shutdown panel since the start of 1R5.

RESPONSIBILITY: Foat, S. RETURN
DEPARTMENT: Electrical Maintenance
Tracking AR: A0307850, AE #04

4. Determine work history in the Unit 2 hot shutdown panel since the start of 2R5.

   RESPONSIBILITY: Foat, S. RETURN
   DEPARTMENT: Electrical Maintenance
   Tracking AR: A0307850, AE #05

5. Determine reportability of potentially inadequate mutually redundant circuit separation in the hot shutdown panel.

   RESPONSIBILITY: Sisk, D. RETURN
   DEPARTMENT: Regulatory Compliance
   Tracking AR: A0307850, AE #06

6. For a fire in the hot shutdown panel, verify that no circuits, in the main control room, associated with the components listed in AE 02 of this AR are affected. Refer to AE 06 for associated reportability determination.

   RESPONSIBILITY: Basu / Hentschel RETURN
   DEPARTMENT: NES - Electrical Engineering
   Tracking AR: A0307850, AE #07

C. Corrective Actions to Prevent Recurrence:

Refer to NCR DC1-93-EM-N019.

D. Prudent Actions (not required for NCR closure)

Refer to NCR DC1-93-EM-N019.

VI. Additional Information

A. Failed Components:

None.

B. Previous Similar Events:

Refer to NCR DC1-93-EM-N019.

C. Operating Experience Review:

Refer to NCR DC1-93-EM-N019.

D. Trend Code:

Refer to NCR DC1-93-EM-N019.

E. Corrective Action Tracking:

1. The tracking action request is A0307850.

2. Are the corrective actions outage related?
Refer to NCR DC1-93-EM-N019.

F. Footnotes and Special Comments:

None

G. References:

1. Initiating AR's:
A0307171 --- Unit 1
A0307172 --- Unit 2

2. NCR DC1-93-EM-N019.

H. TRG Meeting Minutes:

On May 25, 1993, the TRG convened and considered the following:

Investigative actions were assigned to determine whether any mutually redundant circuits were affected, whether separation criteria was not met, to determine work history within the hot shutdown panels, and to make a reportability recommendation.

During the latest refueling outage for both Unit 1 and Unit 2, modifications were made within the hot shutdown panel to prevent a fire in the control room or cable spreading room from affecting circuits in the hot shutdown panel. The modification results in independent control circuit fuses for the hot shutdown panel associated circuits and the control room associated circuits. The circuits in the hot shutdown panel are normally de-energized.

The TRG will reconvene on June 1, 1993, to discuss results of the investigative actions and to make a reportability determination.

On June 1, 1993, the TRG convened and considered the following:

A work order search was performed, and no positive evidence could be found to determine when the panel covers were last removed. Most likely the panels were removed during the 1R5/2R5 Appendix R modifications.

The following issues need to be addressed:

1. How is panel ownership obtained. The person removing the panel cover may not be the person that completes the job and returns the equipment to its original configuration.

2. Should work planners walk down all equipment and list every step required to perform the work.

Systematic walkdowns of the back of the hot shutdown panels are not required for power ascension.

Potential for controlling internal covers similar to the plant jumper log (i.e. document all covers removed, similar to lifted leads) was discussed. This would required training of all craft personnel to implement.

The TRG discussed reportability. Based on the fact that these circuits are normally de-energized, that the Appendix R modification recently made to preclude a short at the control room/cable spreading room from affecting hot shutdown panel circuits (and vice versa), and the fact that a fire does not need to be considered concurrent with a design basis accident, the TRG concurred that the event was not reportable. Investigative Action No. 6 was assigned to NES to confirm these conclusions.

Assuming resolution of reportability as discussed above, the TRG concurred that this event should be addressed under NCR DC1-93-EM-N019, "Unit 1 4kV RHF Hinged Panel". Both NCR's address the failure to return the panel to its original configuration following work related activities within the panel, and both NCR's have the same TRG Chairman. It was agreed that a single NCR would best address a programmatic solution to the problem.

I. Remarks:

None.